

The AV, Multimedia and Digital Signage Sourcing Guide



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The education resources and the technology you need to set up high-performance digital signage and AV distribution systems

This guide simplifies the job of having to choose compatible parts for a video system, whether you're considering digital signage for an SMB application or planning a fully integrated signage and AV distribution system for a large enterprise.

First is an educational section explaining video standards, formats, and the types of components. We also provide tips and lists of questions to ask when designing each part of your network.

Next is a comprehensive catalog of what you'll likely need to set up digital signage or AV distribution for compelling results. This includes digital signage platforms, displays, AV extenders, splitters, switches, converters, cabling, and many other product solutions.

Don't see what you need?
Just give us a call.



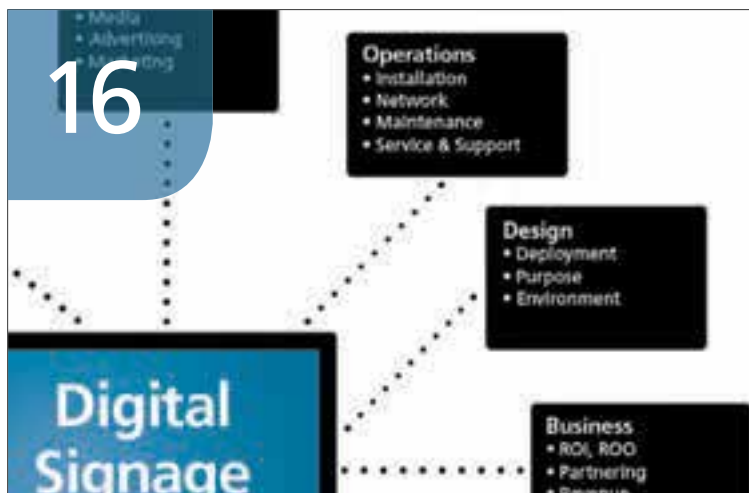
Digital Signage

- Small and medium businesses
- Global corporations
- K-12 and higher ed
- Healthcare providers



Command and Control

- Emergency services
- Industrial control rooms
- Military command and control
- Medical monitoring systems




Digital signage can become a tangled web of technologies if not understood completely. Before starting any signage project, be sure to have a clear idea of how the various parts of digital signage interact with one another.

Learn about the **7 Key Elements of Digital Signage** on pages 16–17.

Analog Video Formats

Most analog formats were designed primarily for broadcast TV transmissions, so they limit the transmission bandwidth required for the signal. The video is typically formatted by combining TV signals into a lower-bandwidth encoded signal. But other analog formats, such as VGA, were designed primarily for computer graphics, so they're far less restricted in bandwidth and, therefore, keep the red, green, and blue signals separate to allow higher-resolution pictures that are suitable for viewing from short distances. Here's a comparison of the various formats:


Composite video

 Among the connector formats designed originally for TV, Composite video is the analog TV signal before modulation onto an RF carrier. It's the standard that connects most older consumer video equipment, including VCRs, CCTV cameras, and video CD players.

As its name suggests, Composite video has the luminance (black and white), chrominance (color) and sync pulses combined in one signal. When developed, Composite video was designed to work with both color and black-and-white TV signals. This backwards compatibility ensured a smooth transition between the two formats in the 1950s. Black-and-white TV sets were able to ignore the color component while newer sets separated it out and displayed it with the luminance information.

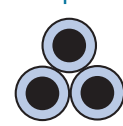
Although this format solved the problem of backward compatibility at the time, by today's standards, Composite video doesn't project a very sharp picture. Because all the video components are transmitted together, they can interact with each other and cause picture defects like dot crawl and color smear.


S-Video

 Also often called Y/C video, S-Video was introduced in the 1980s to overcome some of the shortfalls associated with Composite video. It's a less encoded video format. In the S-Video signal, color (C) and luminance (Y) information are transmitted separately to produce a sharper picture image on the display device.

Most video equipment with an S-Video connector typically also has a Composite connector. When connecting devices that support both interfaces, it's best to use the S-Video connector.

Component video

 Next up the resolution scale from S-Video is Component video (YCbCr). It separates the signal to an even greater extent than S-Video, further reducing the chance of interference and, as a result, improving picture quality. It provides images with higher resolution and better color quality than either traditional Composite video or S-Video.

 Component video separates color information into two color difference signals: B-Y (blue minus luminance, also called Cb or Pb) and R-Y (red minus luminance, also called Cr or Pr). These along with Y (luminance) result in a total of three signals.

You can find Component video on a lot of DVD players, TV receivers, and other AV equipment, displaying the video of DVDs to their best advantage. Until a few years ago, many video devices typically had all three sets of connectors, with the Component video format communicated via either three BNC connectors (typically the case on higher-end, professional AV equipment) or RCA connectors (consumer-grade electronics).

But today, you might find only a Component connection along with a digital video connector. This way, your TV can make use of the full range of video signals.



VGA video

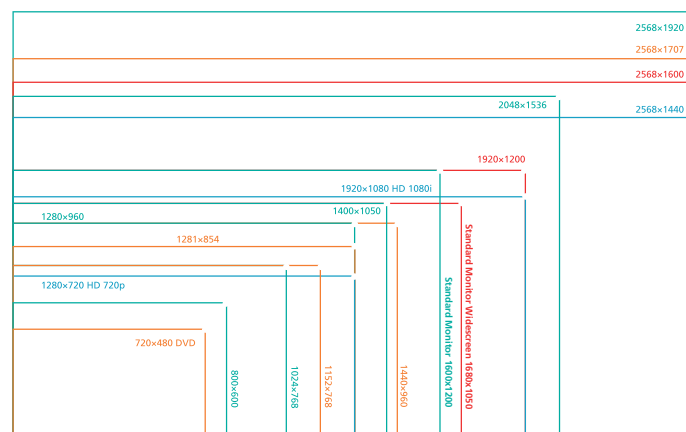
Composite, S-Video, and Component were designed primarily as TV formats. However, when discussing analog computer video formats, we're usually talking about variations of the VGA (Video Graphics Array) format.

The VGA interface carries analog RGB with separate horizontal and vertical sync signals and is presented on an HD15 connector (also called 15-pin D-subminiature). When VGA was introduced by IBM® in 1987 for PC video display, it was a huge improvement over the earlier EGA DB9 connector. VGA, the basic format, supports resolutions up to 640 x 480 with 256 colors.

SVGA (Super VGA), XGA, and later formats continued the drive to provide ever-sharper images and greater color depth (see the chart **below**)—oftentimes, rivaling those of digital 1080i and 1080p displays. Plus, over the years, VESA standards have brought interoperability to a market that was becoming a mixture of often incompatible SVGA graphics cards.

VGA Format	Max. Resolution
VGA (Video Graphics Array)	640 x 480
SVGA (Super Video Graphics Array)	800 x 600
XGA (Extended Graphics Array)	1024 x 768
W-XGA (Wide Extended Graphics Array)	1366 x 768
SXGA (Super Extended Graphics Array)	1280 x 1024
UXGA (Ultra Extended Graphics Array)	1600 x 1200
WUXGA (Wide Ultra Extended Graphics Array)	1920 x 1200

Video aspect ratios and resolutions



■ Widescreen 16:10 ■ TV 3:2 ■ HDTV 16:9 ■ Monitor 4:3

Display standards are a combination of display resolution (specified as the width and height in pixels), color depth (measured in bits), and refresh rate (expressed in hertz).

Digital Video Formats

SDI video



The serial digital interface is a format most commonly found in high-end broadcasting applications. Although SDI transmits uncompressed, unencrypted digital video signals, it typically depends on 75-ohm BNC coax cable for transmission—the same cabling traditionally used for analog video communications.

SDI interfaces are standardized by the Society of Motion Picture and Television Engineers (SMPTE) and include: standard-definition SD-SDI (SMPTE 259M) for 480i and 576i; “expanded” standard-definition ED-SDI (SMPTE 344M) for 480p and 576p; high-definition HD-SDI (SMPTE 292M) for 720p and 1080i; and high-definition 3G-SDI (SMPTE 424M) for 1080p transmitted at 2.970 Gbps.

DVI video



DVI-D, Dual Link

The Digital Video Interface (DVI) is a display technology created by the Digital Display Working Group (DDWG). Its design followed the VESA DFP connector standard, and it was created to accommodate both analog and digital interfaces with a single connector. DVI is the standard digital interface for PCs (in contrast to HDMI, which is more commonly found on HDTVs).

The format is based on transition-minimized differential signaling (TMDS). Single-link DVI uses one TMDS-165 MHz transmitter, and dual-link DVI uses two, doubling the transmission power. A single-link cable can transmit a resolution of 1920 x 1200 vs. 2560 x 1600 for a dual-link cable.

The two most common DVI connector interfaces are:

DVI-D: This digital-only interface provides a high-quality image and fast transfer rates. It eliminates analog conversion and improves the display. Often used to link a source and a display, it can be used when one or both connections are DVI-D.

DVI-I: It integrates both digital and analog RGB support, and it can transmit digital-to-digital or analog-to-analog signals. DVI-I can be used with adapters to enable analog connectivity to a VGA or DVI-I display or digital connectivity to a DVI-D display. You can achieve the best picture quality by using a digital DVI display with a DVI-D video source.

HDMI video



The High-Definition Multimedia Interface (HDMI®) combines uncompressed HD video, multichannel audio, and intelligent format/command data in a single cable with a very compact connector.

HDMI can carry video at resolutions up to 4K x 2K (4096 x 2160 at 24 Hz). It provides superior HDTV video and audio clarity and has enough bandwidth (up to 5 Gigabytes) to spare for future applications. Plus, it's backward compatible with DVI (which simply ignores extra HDMI data).

HDMI also supports multiple audio formats from standard stereo to multichannel surround sound. For video distribution applications, HDMI provides two-way communications between the source and the digital TV, enabling simple, remote, point-and-click configurations.

HDMI also supports High-bandwidth Digital Content Protection (HDCP), which prevents the copying of content transmitted over HDMI cable. If you have a device between the source and the display that supports HDMI but not HDCP, your transmission won't work, even over an HDMI cable.

HDMI offers significant benefits over older analog AV connections. It's backward compatible with DVI equipment. A DVI-to-HDMI adapter can be used without a loss of video quality.

Buyer's Tips

- ✓ If one connection is DVI and the other is VGA HD15, you'll need a cable or an adapter with both connectors.
- ✓ To transmit embedded audio (without the need for a separate audio run), use HDMI or DisplayPort devices.
- ✓ A DVI-to-HDMI adapter can be used without a loss of video quality.
- ✓ Even with an HDMI cable plugged into a Blu-ray player, devices in the distribution chain must be HDCP compatible to display the video content.
- ✓ If you require connections in high-vibration areas, devices with DisplayPort connectors are a good choice.
- ✓ Newer DisplayPort++ sources are able to output DVI or HDMI signals using a simple adapter. This, however, doesn't work the other way around.
- ✓ For advanced display technologies such as 4K, 3D, and Deep Color, as well as outputting video on WQXGA cinema monitors, use High-Speed HDMI cable for connections.

The HDMI standard was introduced in December 2002. Since then, there have been a number of versions with increasing bandwidth and/or transmission capabilities. Version 1.3, introduced in 2006, increased the bandwidth to 10.2 Gbps and added support for up to 16-bit Deep Color. Version 1.4, released in 2009, increased maximum supported resolution to 4K x 2K (4096 x 2160 at 24 Hz), and added support for a 100-Mbps Ethernet connection between the HDMI devices, an audio return channel, and 3D support.

DisplayPort video



Designed by the Video Electronics Standards Association (VESA), it competes directly with HDMI. Unlike HDMI, however, DisplayPort is an open standard with no royalties.

This digital interface is used primarily between a computer and a monitor or an HDTV and is built into many computer chipsets produced today. It's incredibly versatile, with the capability to deliver digital video, audio, bidirectional communications, and accessory power over a single connector.

DisplayPort v1.1 supports a maximum of 10.8 Gbps over a 6.4-foot (2-m) cable; v1.2 supports up to 21.6 Gbps. DisplayPort v1.2 also enables you to daisychain up to four monitors with only a single output cable. Plus, it offers the future promise of DisplayPort hubs that would operate much like a USB hub.

Cables up to 50 feet can be used for lower resolutions.

The standard DisplayPort connector is very compact and features latches that don't add to the connector's size. Unlike HDMI, a DisplayPort connector is easily lockable with a pinch-down locking hood. A quick squeeze of the connector releases the latch. Because it locks into place, accidental disconnections are less likely—a quite useful feature for any video distribution application where there's digital signage in public areas.

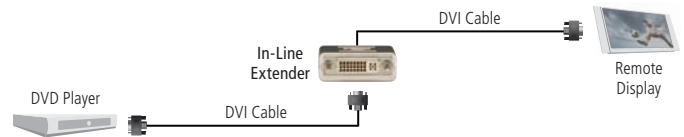
DP++ compatible sources are able to output TMDS signals (HDMI or DVI video) by using a compatible DisplayPort to HDMI or DVI adapter. HDMI or DVI sources, on the other hand, require an active powered converter to change the signal to DisplayPort.

Cable-Based Distribution

In-line based

In-line extenders, installed at some point within a link, extend signals over their native cabling with no signal conversion occurring. These amplification or repeater types of devices are designed to equalize and amplify the signal to go greater distances. Some support daisy chaining, so by stringing two of them together you can send data double the distance.

But in-line extenders can only take the signal so far and typically use



amplification that not only boosts the video signal, but also boosts any noise on the cable. In addition, they don't solve the problem of having to transmit bidirectional serial control signals to the display.

Non-networked CATx-based

This method uses transmitters and receivers to extend converted signals over non-networked UTP cabling. They're very cost-effective, enabling much longer distances than what's ordinarily possible with analog or digital video cabling.

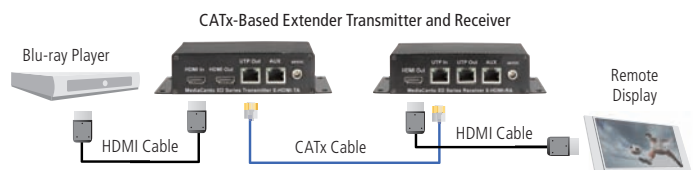
Copper-based extension is also a great alternative to using standard video or RGB coax cables, which often can't be easily pulled through tight conduits and can be more difficult to terminate (for more on the limitations of simply extending video cabling, see [below](#)).

A bonus: In most buildings, copper cabling is already installed to service data communications. There's no need to pull new cabling when existing wiring can be used for long-distance AV distribution instead.

Another thing to consider: Coax- or VGA-cabled extension installations usually require a separate RS-232 or other line for transmitting the control signal for a display—yet another cable to fit into the conduit and another distance limitation (most serial signals can travel only a short distance over

traditional cable). Some CATx-based extenders also extend serial control signals in addition to video and audio. Therefore the cable can deliver both the video and control signals through a single transmission medium.

Plus, CATx extension technology continues to evolve. Newer HDBaseT™ technology uses sophisticated encoding and equalization techniques to deliver uncompressed DVI or HDMI video and audio, 100BASE-T Ethernet, power, and control signals to a remote screen—all over a single CATx cable. HDBaseT has made it possible to transmit the video signal as well as the peripheral signals uncompressed up to 330 feet (100 m).



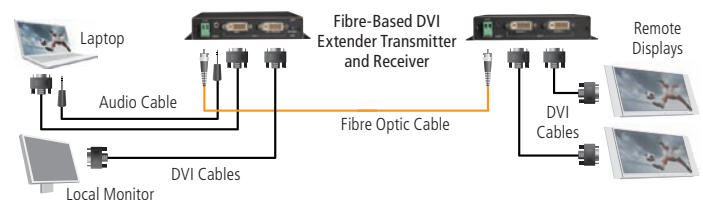
Non-networked fibre based

Using fibre-based technology has many advantages over copper-based distribution technology. Foremost, it enables you to deliver video at much longer distances than copper—without compromising the quality of the original video signal. This makes it an ideal distribution method for digital signage.

Plus, it supports high resolutions and the sending of large, bandwidth-consuming files, particularly in electronically noisy environments, such as in transit stations. Because fibre is made of glass, which is an insulator, no electric current can flow through. This makes it immune to EMI/RFI interference. You can run fibre next to industrial equipment without worry. And, compared with copper cable, fibre cable is less susceptible to temperature fluctuations.

In addition, fibre distribution is ideal for applications where data security is a priority, such as in medical, military, and government environments. That's because fibre cable is extremely difficult to tap.

And fibre cable is more durable than copper cable, and it's thinner. Its size makes it easier to handle, and it takes up less space in cabling ducts. Yes, fiber is more expensive, but many fibre-based extenders use just a single strand of fibre, for a more economical use of your fibre count.



Why not just run longer cables?

An analog video signal can be run over long lengths of native VGA cable as long as its diameter and shielding is good enough. However, regardless of the cable quality, signal attenuation increases with video frequency and cable length. This means that after 30 to 50 feet, the image quality will start to degrade. This leads to color skew and smeared-looking text.

To solve for signal degradation in VGA video applications, use an equalizer, or an extender that compensates for signal loss. A good extender has separate adjustments for high and low frequencies; HF loss is usually greater than LF loss.

Analog signals travel in a sine-like wave form; digital DVI and HDMI signals travel in a square-like waveform. The signal is broken into a binary format where the audio or video data is represented by a series of 1s and 0s. Like analog signals, digital video also suffers from cable loss, but as long as the cable is of sufficient quality and within the maximum supported distance, the signals don't suffer blurring or color skew.

So what happens when the maximum supported length is exceeded? You get the "cliff" effect, where the signal drops off and you completely lose the picture. To overcome distance limitations, use extenders or repeaters.

IP-Based Distribution

IP-based distribution technologies use transmitters and receivers to extend signals over a TCP/IP network (a LAN or even a WAN, for instance). Oftentimes, they're called IP streamers when used with codecs. But, when choosing one, be sure you're not looking at the consumer-grade devices for streaming video in small office applications; be sure it's a professional-grade multicasting product.

These sophisticated extenders use CATx cabling infrastructure, but in comparison to standard non-networked CATx extenders, they multicast data over an active Ethernet network. They do this by packetizing media streams for delivery over an IP-based network, so source content can be delivered anywhere you have Ethernet wiring.

By leveraging existing IP network connections to distribute multimedia content, businesses can avoid running expensive dedicated links from a back room to digital signage in lobbies or other public areas. Plus, the video is a lot less susceptible to interference, image skew, and compromised resolution.

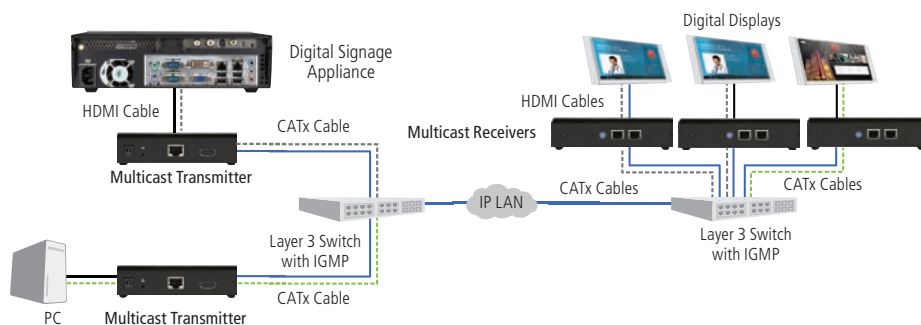
Compression makes it possible to run the signal over longer runs—and compression does not have to mean low-quality video. Compressions may be lossy or lossless. The IP-based extension methods we're discussing use visually lossless compression with algorithms that make it possible to run Full HD video over the LAN without any visual loss in quality.

They may even simulcast video and audio synchronously so there's no latency, feature QoS prioritization and bandwidth-management controls, and the ability to use bidirectional (two-way) serial signals to query a remote display to, for example, shut it down and power it on or gather performance data. What's more, the system you choose may even support bidirectional serial connections for use with interactive touchscreens.

Also, they may or may not support existing networking standards. This is important if you need extra distance in your distribution application. If they do support Ethernet standards, you can extend video through networking switches to get extra-long distances, beyond the specified cabling distances of 328 feet (100 m) per the Ethernet standard.

Because IP-based extenders are based on standardized Ethernet protocols, you can even use media converters and run several miles over fiber cabling. Plus, these extenders transmit signals digitally from end to end, so digital content is never compromised.

Meeting existing standards also allows for easy installation and expansion. Simply plug in as many receivers as you need for your remote screens and use a standard Gigabit network switch with IGMP snooping to control the traffic. IGMP is very important in multicasting. This stops an IP switch from passing on multicast data onto every port and prevents performance degradation and wasted network bandwidth. Switches with IGMP support



“know” which devices on your IP network want to receive the multicast packet and who doesn't. Otherwise, the traffic may be broadcasted to every end device on your network, slowing it to a halt.

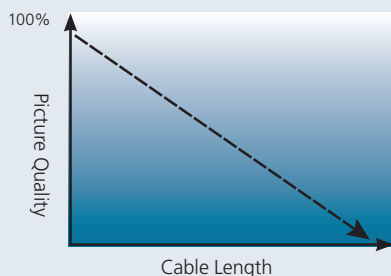
Multicasting isn't limited to just video either. You can also use it for both video and peripheral signal extension and sharing (often called “KVM extension”) applications. These types of extenders feature keyboard/mouse emulation and emulation for other standard HID devices, while providing easy access to single-, dual-, or quad-head computers—ideal for applications requiring multiple graphic heads to be switched simultaneously from a single workstation. In command and control room setups, for example, you can multicast video and data to receivers attached to LCDs in video walls. Users can then interact with computers behind the scenes using separate keyboard, mice, and digital displays.

QUESTIONS to ask.

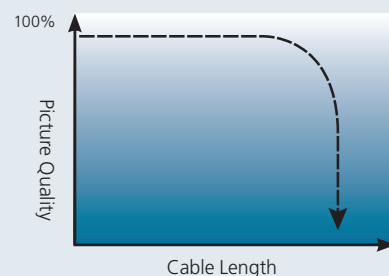
1. How far do you need to transmit your video? Do you want to go farther than 320 feet?
2. Do you have copper (CATx or coax) wiring not in use?
3. How important is video quality? Do you intend to transmit medical images or detailed graphics renderings?
4. Is bandwidth an issue on your network? Is your LAN already being used for VoIP or data-intensive applications?
5. Do you want to transmit to one screen or multiple screens?
6. Will you need connectivity to serial touchscreens?
7. Is data privacy an important consideration?
8. Will you be distributing video near machinery?
9. Do your network switches support IGMP snooping?
10. Do you need peripheral support (for instance, for remote users who require keyboard and mouse control, or for command and control room applications)?

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Picture quality of an analog signal gradually declines over longer lengths of cable.



Picture quality of a digital signal (e.g. HDMI) suddenly drops at a certain length of cable (cliff effect).





Source Devices

Digital signage publishers

Also called digital signage appliances, these function essentially as storage devices to play back digital content, such as MPEG or Windows® AVI media, Flash® animations, PowerPoint® movie files, and audio. They can operate on their own (directly connected to a screen), but are usually on a network with their own IP address, enabling management via a browser-based interface.

They can also be set up to deliver RSS and XML data feeds, and other Web-based content in real time to your displays. They're usually Windows or Linux® based PCs by design with spacious drives and high-performance processors. They're called publishers because they contain the software that enables you to manage content distribution, as well as creative design tools to set up and insert media into zones within a signage presentation.

Other video sources

This can be as simple as a Blu-ray or DVD player, or a robust dedicated or shared server hosted centrally or in a distributed environment.

These devices can also be used to bridge the connection between your digital signage publisher and a content management system. For instance, prerecorded video and other content can originate from the content management system or a video library. For corporate applications, your AV distribution system can be connected to an Oracle® database or a CRM system, and in retail applications, digital signage screens can link to a PoS database running on a network and tracking available inventory.

Source devices can also be whatever it takes to link a Internet or WAN feed to your video distribution or digital signage system, including network gateways or CATV or DTV set-top boxes.

Extenders

For maximum reach and image control in your AV distribution or signage application, you'll likely need devices that enable you to send signals farther than what's possible when using video cabling by itself. These transmitter/receiver combos enable you to send DVI, VGA, or other types of video (as well as audio) from a PC or other source devices to remote screens.

These devices include:

- In-line extenders, like amplifiers and boosters, which are installed within a video cable run.
- Baluns, which are devices that connect a balanced line, such as twisted-pair cable, to an unbalanced line, such as coaxial cable. Many versions are available for VGA and other analog RGB video standards, as well as CCTV camera connections.
- CATx-based extenders, which convert the signal for extension over CAT5 or higher-grade cable, enabling you to use inexpensive wiring for your long-distance extensions.
- Fiber-based extenders (or transceivers), which convert and distribute AV signals over interference-free fiber cabling at very long distances.
- Broadcasters, which are like extenders in that they typically use CATx cabling to distribute video to remote locations. However, they also support multiple channels for multisite distribution.
- QAM modulators. These encode and modulate video input and create an HDTV channel for low-cost video distribution over existing RF cabling. Simply use the QAM tuner of an HDTV to receive the channel.
- IP-based streamers and encoders/decoders. These devices compress and encode source video for extending over a LAN using lossless compression technology. They can be for multipoint distribution (multicast) or point to point (unicast).

Other Signal Distribution Components

Splitters

For displaying images on multiple screens, order a splitter. Unlike CATx-based broadcasters or multichannel extension products, splitters divide a PC's VGA, DVI, HDMI®, DisplayPort, or other type of signal without sacrificing quality.

In some cases, splitters buffer output and drive signals extra distances without any loss, so they essentially function as extenders, too. They're a great choice for splitting signals in retail applications where you want to keep source equipment in a secure area.

Plus, they're very easy to set up. In most cases, you just connect the video cables, power up your system, and you're ready to start duplicating images for multiple monitors or displays.

Switches

Available in VGA, DVI, HDMI, and other versions, these enable you to switch video from PCs with multiple video outputs to a common display. You can do this manually or set it up to switch automatically based on input detection. Many switches also come with IR remote control units so you can switch sources away from the unit itself. Most also include an RS-232 port for connecting to a serial console.

Matrix versions are available for showing video images from separate sources on multiple displays, eliminating the need to constantly swap cables between inputs and outputs.

For instance, if your operation has four PCs and you want to display the video on one monitor to the other three monitors, a matrix video switch is what you need to handle the job. In many cases, they can be linked to a Crestron, AMX, or similar system.

Any source input can be routed to any display output, and their matrix functionality makes them ideal for command and control rooms where one has to frequently switch video from multiple sources to multiple screens. They are also great for video broadcasting, corporate theater, conference room, and training applications. For easy recall, most matrix switches store a number of preset routing patterns.

And because many newer HDMI switches are HDCP compliant, they can be connected to Blu-ray players or other protected-content sources, a function that enables easy integration into video production environments.

What about wireless distribution components?

It is taking the industry longer to offer completely reliable solutions for distributing high-quality video wirelessly. Part of the problem is the inability to consistently transmit full-motion video in real time over an active wireless connection. Because the technology often involves multicasting video, audio, and peripheral signals, there are latency issues at higher resolutions. Error propagation and latency can make transmittal unreliable if there is insufficient or shared bandwidth.

Yes, it can be done, but bandwidth is still a limitation. Full HD video requires a huge amount of bandwidth, limiting distance. Even the best solutions on the market today are limited to maximum distances of about 100 feet, and having to go through walls reduces distances further.

Also complicating matters: The wireless video solutions have to share the spectrum with other wireless services, including regular Wi-Fi. This may affect the reliability of the wireless video system as well as the Wi-Fi network, so some planning and careful design is recommended.

If you require a wireless video solution, call our FREE, 24/7 Tech Support experts on 0118 965 6000

Advanced video and peripheral sharing systems

In some applications, switching just video and audio isn't enough. You may also need to access and switch between peripheral USB HID devices and remotely located computer CPUs or backracked servers, and provide switching access to more than one employee.

In these applications, a modular video and peripheral matrix switching system can provide you with the flexibility you require. These modular crosspoint switching systems enable you to switch between PC CPUs in applications where HD video is everything. They're designed to interface with and enable non-blocking matrix switching of digital video, USB-HID, USB 2.0, RS-232, and audio ports.

What's more, they enable you to use the existing cabling infrastructure for connectivity between a console/CPU and a switch without a media converter or third-party switching device.

In addition to matrix switching, they may even provide high-performance routing of HD video, audio, and data for complete signal distribution. In this instance, they work as extension devices, and like our IP-based extenders, they use multicasting to distribute signals over a network.

If you don't need such advanced switching and extension capabilities, but just want easy monitoring and switching of video from multiple computer heads, a KVM type of sharing/switching device may be all you need. These give you the ability to control multiple CPUs or servers from one keyboard and mouse plus the ability to display the video from those multiple servers or servers on one monitor—all at the same time, and in real time.

In addition to command and control rooms, KVM switches are ideal for workstations in financial, banking, engineering, graphics, and healthcare.

QUESTIONS to ask.

1. Where do you intend to store most of your video content (on a backracked server, on a workstation PC, at a remote office, on an FTP site)?
2. Do you intend to distribute video from a number of different sources (including Blu-ray or DVD players)?
3. Will you need to integrate a sales CRM system or other database into your AV distribution system?
4. Do you intend to use RSS feeds or other external Web content on digital signage?
5. When outputting video from a single source to multiple displays, do you require extended distance?
6. Will you be transmitting in video areas with interference or vibration?
7. Do you have CATV or other RF coax wiring available?
8. Will you need to distribute signals from more than one source to a display?
9. Will many users, including those in remote offices, require workstation access to multiple computers for routing video to multiple screens?

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Essential components for converting and upscaling video

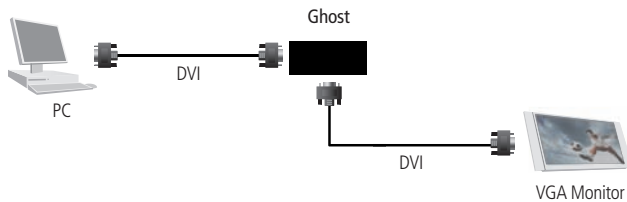


Conversion and Scaling

EDID Ghosts and Emulators

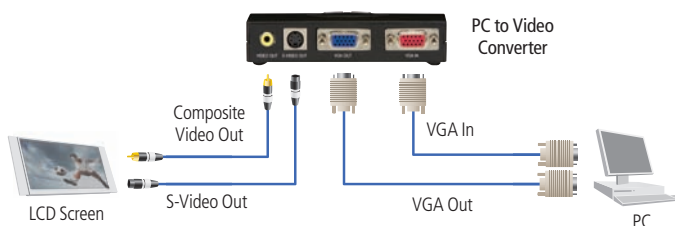
Ghosts can be handy tools to solve problems with certain combinations of video sources, distribution equipment, and displays. Display Data Channel Extended Display Identification Data (DDC EDID) is the data that tells your computer's graphics card what characteristics your monitor/display has, such as resolution, color depth, digital pixel mapping, and more. The monitor automatically sends the DDC EDID straight through to the computer. But, sometimes, when you put a device, such as a KVM switch, between your monitor and computer, the data is not passed through. The result can be blank screens, boot problems, as well as resolution and color issues.

In these cases, use a **ghost**. A ghost will store the data from the display and pass it on to the graphics card.



Video Converters

Video converters, at their most basic, convert and reformat signals from one video interface to another type of video interface, such as ones that enable you to display VGA computer video on an NTSC or PAL TV. Basic video converters are neither scalars nor scan converters. This means that the resolution of the video signal at output is the same as the input signal, which can be a problem if you're trying to send PC video to an HDMI-enabled display. Therefore, if you set your PC at a resolution of 1024 x 768 (XGA), your display may not show the HDMI image. In this case, you have to set your PC's resolution to either 640 x 480 at 60 Hz (VGA interpreted as 480p), 800 x 600 at 50 Hz (SVGA interpreted as 576p), 1280 x 720 at 60 Hz (WXGA interpreted as 720p), or 1920 x 1080 (1080p).

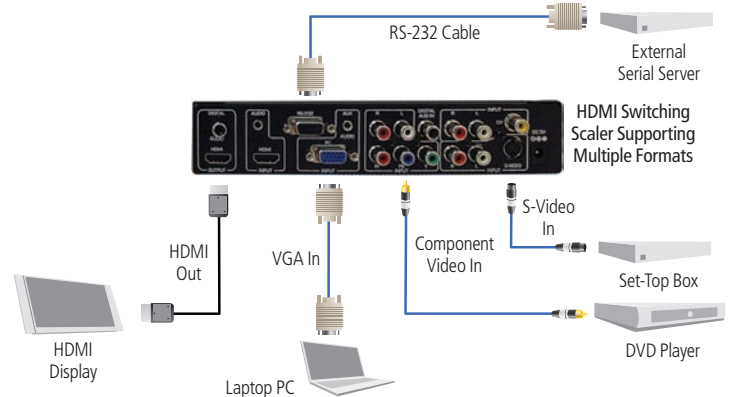


Scalars

A scalar is a device that samples an input signal and scales it up or down to a resolution and timing suitable for the display. A scalar may optionally also convert the signal to a different format. A scalar that downscales video is sometimes called a scan converter.

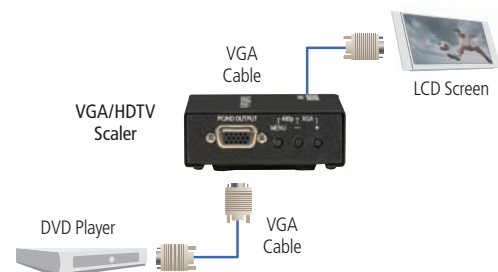
Scalars are particularly useful when you want to connect different analog and digital equipment for output on a common display, such as in a presentation environment where you don't want to fiddle with controls to get the picture right. All you do is set the output resolution to match the native resolution of the connected display.

Scalars that support switching take this concept further, enabling you to electronically switch video inputs and letting the box automatically make the necessary adjustments.



Usually, the scaling involves "upconverting" the signal. This is a process where the number of display pixels is mapped and adjusted to accurately match the resolution of the newer display. Deinterlacing technology with advanced motion compensation intelligently scales the source signal to the desired resolution with virtually no artifacts or distortion. In addition, scalars often perform frame rate adjustments so the proportion of the image isn't resized incorrectly.

There are other products that scale images for larger displays and enable you to manipulate and rotate images on multiscreen video walls.



Cabling

DisplayPort

DisplayPort is the newest AV interface. It’s incredibly versatile with the capability to deliver digital video, audio, graphics, bidirectional communications, and accessory power over a single connector. DisplayPort is targeted at the computer world rather than at consumer electronics. It is used to connect computers, monitors, projectors, etc. DisplayPort connectors are found on

newer computers and displays; the Mini DisplayPort connector is also found on Apple® products. DisplayPort uses a packetized data structure instead of a serial one, like DVI and HDMI, so it is not directly backwards compatible. But DisplayPort ++ (dual-mode) is able to output DVI and HDMI signals with an adapter.

Quick Facts

DisplayPort/HDMI comparison.



20-pin locking connector

	DisplayPort	HDMI
Cable length	2 m; Reduced bandwidth: 15 m	5m
Top bandwidth	21.6 Gbps	10.2 Gbps
Daisychain monitors	4	None
Locking connector	Yes	No
Backward compatibility	HDMI, DVI, VGA with adapter	DVI
Standard	Open	Licensed
Market	PC world	Consumer electronics

HDMI

High-Definition Multimedia Interface (HDMI) was the first digital interface to combine uncompressed high-definition video, up to eight channels of uncompressed digital audio, and intelligent format and command data in a

single cable. HDMI is the de facto standard for consumer electronics. HDMI is backward compatible with DVI. Buy only tested cables with the HDMI logo. This guarantees the cable will perform to specification especially

Quick Facts

HDMI



Standard HDMI and Standard HDMI with Ethernet	High-Speed HDMI and High-Speed HDMI with Ethernet
4.95 Gbps	10.2 Gbps
720p/1080i	1080p and beyond

NOTE: The HDMI standards with Ethernet have an additional dedicated data channel for device networking.

because there is no maximum length specified in the HDMI standard. And because longer lengths require a larger cable, HDMI cables usually have 24–28 AWG copper conductors. For 1080p, Deep Color, or 3D content, choose High-Speed HDMI cables.

DVI

These high-speed cables have the bandwidth necessary for high-definition video and are ideal for linking digital signage screens and other equipment. DVI-D is a digital-only connector. DVI-I supports both digital and analog RGB connections. DVI-A is used to carry an analog DVI signal to a VGA device, such as a display. DFP as an early digital-only connector. Dual-link cables double the power of the transmission up to 9.9 Gbps and support QXGA resolutions up to 2048 x 1536 at 60 Hz. Single-link cables transmit up to 4.95 Gbps at 1920 x 1200.



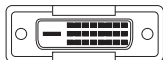
DVI-D, Single-Link



DVI-I, Single-Link



DVI-A



DVI-D, Dual Link



DVI-I, Dual Link



DFP

HD15 VGA

These cables can contain both 28 AWG mini coax and 24 AWG tinned-copper VGA conductors to provide support for all control leads, including Pins 9 and 15 for DCC compliance. This cable transmits analog video signals. It does not support audio.



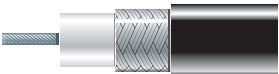
HD15 Male—VGA



HD15 Female—VGA

Coax

Coax cable is used as a transmission line for radio-frequency signals. It is ideal for AV distribution and for connecting CCTV, in-house TV systems, radio transmissions, and surveillance systems. Coax cables are shielded to prevent EMI interference.



QUESTIONS to ask.

1. What type of connector does your equipment have?
Currently, the most commonly found connectors on computers, displays, and projectors are DVI. New computer equipment will most likely have DisplayPort and/or HDMI connectors. Older equipment will have VGA connectors. And, home theater equipment will have HDMI connectors. Take a look at the connector illustrations on this page to determine what type of connector you have.
2. Can I mix equipment with different connectors?
Yes and no. If you need to connect a monitor with a VGA connector to a PC with a DVI-I connector, you can, but you'll need an adapter or a cable with both connectors. Adapters also exist to connect DisplayPort, DVI, HDMI, and VGA equipment. But, if you run a digital signal from a PC into, say, a switch, it can't be converted to analog without an active converter or scaler. Also, to go from DisplayPort to DualLink DVI you need active converters.

Contact the experts on 0118 965 6000

Pulling it all together—and

Video infrastructure

Most modern digital signage systems operate over Ethernet, enabling you to use the infrastructure you already have in place. Generally these systems consist of a publisher unit connected directly to the network. This is usually located in a central location such as a data center. On the remote side, a digital signage player is connected to the network near the video screen and is linked to the display with an HDMI or a DVI cable.

When installing a video signage system—especially if you're displaying streaming high-definition video—it's important to have an Ethernet network that's up to the task. 100-Mbps Fast Ethernet is a minimum requirement; 1000-Mbps Gigabit Ethernet is preferable, especially if you're also running other high-bandwidth applications such as VoIP.

It's also important that your Ethernet network supports Quality of Service (QoS), which gives streaming video destined for your digital signage system network priority.

Display mounts

There are many options when it comes to mounting video displays, enabling you to mount a screen virtually anywhere you need one.

Flush wall mounts — Place the screen flat against a wall or other flat surface.

Flush with tilt wall mounts — Place the screen against a wall or other flat surface, but enable you to tilt the screen for better viewing.

Articulating wall mounts — Provide swivel articulating arm that enables a full range of motion.



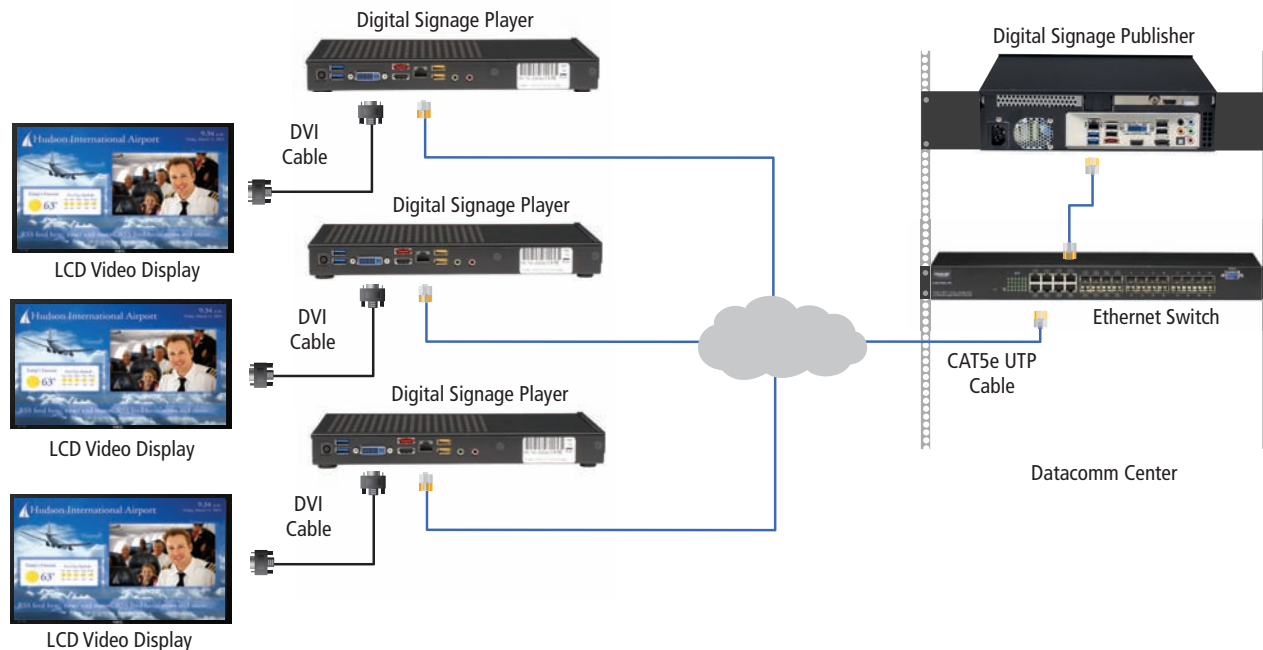
Ceiling mounts — Hangs a video screen from the ceiling, usually on an arm that provides a bit of space between the display and the ceiling.

Video wall mounts — Video displays in video walls require specialized mounts to tile the displays precisely without gaps. These are often specific to each kind of display.

Dual mount adapters — These specialized mounts enable you to mount two screens either side by side or back to back. A back-to-back ceiling mount can be especially useful for displaying information in public spaces such as airports.

Enclosures

When you place digital signage within reach in public areas such as shopping centers, schools, hospitals, restaurants, and hotels, you need an enclosure to provide protection from theft, vandalism, and curious children. Although there are many variations, these are usually simple locking enclosures with a clear pane for viewing the video display.



adding some finishing touches

There are also sealed enclosures designed to protect signage outdoors—probably the toughest environment for digital signage. Aside from the obvious moisture issues, extreme heat and cold are the biggest threats to digital signage. If signage is exposed to direct sunlight—for instance, in the drive-through lane at a fast food restaurant—extreme heat and condensation are added to the mix. There are now enclosure solutions on the market, which address these issues to varying degrees, through a built-in climate-control system.

Factory floors and industrial areas may not have the same moisture and temperature issues as the outdoors, but they can also be difficult for digital signage because of the dust often associated with these environments. For these areas, look for a NEMA 4-rated enclosure to ensure protection against dust and grime.

CCTV

A frequent video application is in the security arena where CCTV cameras are combined with real-time human monitoring and DVR systems to provide visual security for sensitive areas. DVR systems designed for security applications record video from digital or analog cameras in a digital format on a hard drive or in solid-state memory. They're designed to operate maintenance free for weeks or even months.

Many CCTV security systems enable you to remotely view cameras live or to view recordings from anywhere on your network or the Internet.

Motion detectors may be integrated into a CCTV security system, triggering cameras to record only when motion is detected.



EME1M1-005-R2



EME1K8-005

Digital signage players

The component that feeds video to the video display is called a digital signage player. The player can either be a part of a digital signage system and receive data from a digital signage publisher, or it can be a freestanding device with previously recorded data.

Freestanding players are inexpensive, but must be updated individually from a PC or from a USB flash drive. They're a good choice when the information displayed is relatively limited and static—for instance, a menu displayed at a cafeteria entrance.

The advantage of choosing a player that's part of a system rather than a freestanding device is that multiple digital signage displays can be managed and updated from one central location and can be updated on the fly. This enables you to, for instance, put out emergency messages, weather updates, and traffic alerts.

Power protection

One good power surge is all it takes to destroy an LCD screen. Digital signage is an expensive investment that must be protected from harmful transient power disturbances such as surges, spikes, voltage fluctuations, and electrical noise.

Video displays as well as the digital signage system and network components should be protected with at least a surge protector with noise filtering.

For even more protection, an uninterruptible power supply (UPS) provides power during short outages and corrects for voltage fluctuations, which you may not notice but which can damage electronics.

A surge protector with noise filtering such as the Digital Signage Power Filter goes a long way towards protecting delicate electronic components from power spikes and surges.



Audio speakers

Although digital signage is primarily a visual medium, some presentations may benefit from the addition of sound. Although most video displays have built-in speakers, you may want to add external speakers to improve the quality of the sound. Directional speakers can focus the sound directly in front of the display to get your message across.

Conference room interface equipment

There's a whole subclass of multimedia tools that are tailor-made for conference rooms.

Touchscreen meeting planners — An interactive display at the door to each conference room that enables people to reserve the room and displays the times the room is reserved. Many of these systems are on-line, enabling users to log in remotely from their PCs or smartphones to reserve the room.

Digital projectors — Enable you to import PowerPoint® and other presentations directly from a laptop to show to a group on a screen.

Videoconferencing equipment — Videoconferencing has taken off, saving a lot of long-distance travel time. Today's conference rooms can be equipped with the tools for videoconferencing, either a proprietary system or a PC equipped with microphones, Web cams, and a very large monitor that can be seen clearly by all participants.

Electronic white boards — Provide an electronic surface for notes and enables these notes to be saved to a computer for later review or for e-mailing to meeting attendees.

Accessory and Remote Control Hardware

Network switches

Applications such as network imaging, multimedia production, and digital signage are very demanding. They generate huge data files that often must be transferred between stations based on strict timing requirements. If such traffic is not transmitted efficiently, you end up with jerky video, on-screen graphics that take forever to load, or other problems.

These problems arise because in traditional LANs, only one network node transmits data at a time while all other stations listen. This works in conventional, server-based LANs where multiple stations share files or applications housed on a central server. But if a network has high-bandwidth applications, the one-station-at-a-time model just doesn't work.

This is where the value of a switch comes in. Network switches provide clear paths from each workstation (or other source) to its destination on demand. If your AV distribution system uses IP-based technology to multicast video content over a LAN, a network switch absolutely necessary.

And not just any network switch will do. Multicasting is transmitting data from one network device to multiple devices. When multicasting with ordinary Layer 2 switches, all attached devices receive the packets, whether they want them or not. Because a multicast header does NOT have a destination IP address, an average network switch will not know what to do with it. So the switch sends the packet out to every network port on all attached devices. This extra traffic can slow down a network.

Switches with IGMP support, however, "know" who wants to receive the multicast packet and who doesn't. When a receiving device wants to tap into a multicast stream, it responds to the multicast broadcast with an IGMP request, the equivalent of saying, "I want to connect to this stream."

Therefore, for multicasting, use routers or switches that support the IGMP protocol. Without this support, your devices will be receiving so many multicasting packets, they will not be able to communicate with other devices using different protocols, such as FTP. Plus, a feature-rich, IGMP-supported switch gives you the bandwidth control needed to send video from multiple sources over a LAN.

Specialty KVM extenders

Your AV distribution application may require more than components that extend, split, and switch video. You may also need support for workstation control so users in remote offices can access servers or other computer sources hosted elsewhere.

For this support, a KVM extender can give you the level of control you need. They enable you to place CPUs in cleaner or more secure locations other than your workspace. Plus they extend switching anywhere from a few feet (over CATx cabling) to up to a few miles (over single-mode fiber).

Connect the transmitter (local unit) to a CPU or server and have a KVM console (receiver or remote unit) with a VGA or DVI monitor, keyboard, and mouse in another room or office. Many also support multiuser access, making it easy for multiple users to collaborate in a multimedia workflow.



Remote management/peripheral sharing components

These more sophisticated components enable you and other users to access your media servers from anywhere in the world via an IP network—often at the BIOS level, even when the operating system is down.

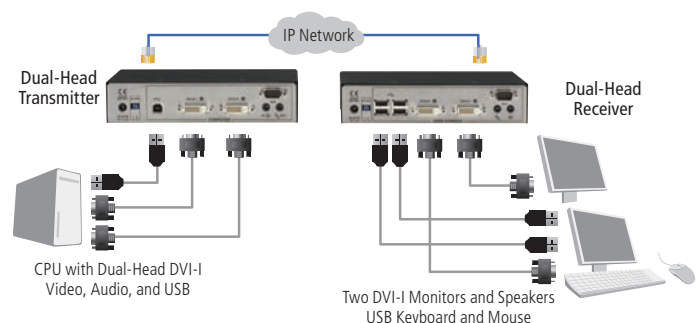
Technically classified as KVM extenders, they're ideal for use where you need to precisely access and control isolated, standalone servers, such as in remote digital displays. And for a digital signage network, all you need is an IP network in the installation to easily deliver content from one playout device via a digital DVI video link.

The latest models support high-quality video, too. This can be a single video head, or dual- or quad-head computers. Because video is transferred digitally, you can count on high color and picture fidelity at LAN speeds.

Standard CATx cabling delivers IP traffic up to 328 feet (100 m), or you can use fiber cable to go farther, over miles, using Ethernet switches or media converters. No-loss compression minimizes bandwidth.

What's nice is, these extension and sharing devices can also extend not just video and keyboard/mouse signals, but they often also provide easy access to external peripherals. In addition to keyboard/mouse emulation, they support emulation for standard Human Interface Devices (HIDs), such as touchscreens.

Dual-Monitor DVI Extension over IP



Security, Optimisation, and Troubleshooting

Firewalls/data security equipment

To ensure data privacy, work with your IT department to implement protection and safeguard your content. This is particularly important if you're using your AV distribution system to send video across a hospital or government network and if you have to comply with HIPAA, HITECH, PCI, or other data-protection standards

This may require establishing IPsec VPN tunnels between sites. Newer technologies, however, enable you to establish an instant encrypted connection between locations without the administrative hassle of setting up a separate tunnel for each link. What's more, these technologies don't add latency, which can bog down your video and data communications.

Skew compensators

Some video extenders are not designed to transmit video across cable that's higher than CAT5. In fact, with these extenders, the higher-grade cable may actually degrade video. The problem is with the cable twists of CAT5e and CAT6 cables; the wire distance that a signal has to travel is different for each pair. This doesn't normally cause a problem with data, but if you're sending higher-resolution VGA analog video signals across long cables, you may see color separation caused by the signals arriving at different times. If the extender you're using doesn't have built-in skew compensation, the remedy is a device that compensates for skew. (NOTE: This applies only to VGA analog signals and not to digital HDMI and DVI signals.)

Pattern generators

Use these to ensure video signal reproduction and display are up to par in your AV and digital signage applications. They enable you to generate test patterns to troubleshoot video calibration issues. Pattern generators are particularly useful for testing in applications where accurate video reproduction is important, such as healthcare, biotech, educational, and industrial settings.



Cable testers

In addition to pattern generators, you can ensure a quality video infrastructure by troubleshooting supporting cable runs. With one of these handheld testers, you can spot slow cables, bad connectors, incorrect wiring, improper lengths, and low signal levels from switches, PCs, and other hardware in your AV network. If you have a qualification tester, you can also test for available bandwidth and distinguish between network and cable problems.



5 common video errors and how to fix them.

Digital HDMI and DVI formats provide sharp, crystal-clear image quality. However, problems can occur. Here are the five most common:

Problem 1:

Black screen (no picture at all).

Possible cause:

- A. Bad cable or cable that's too long, causing either the video signals or EDID/HDCP control signals not to be transmitted properly. Make sure that you use quality, high-speed HDMI® cables—they don't even have to be expensive ones—or try an HDMI extender.
- B. HDCP is unsupported. Does the display support HDCP? DVI displays usually don't.



Problem 2:

"Sparkles" in the picture.

Usually caused by: HDMI cable that's too long or of inferior grade. The solution is to use a video extender, and/or buy quality HDMI cables from a reputable supplier.



Problem 3:

RGB color tint.

Usually caused by: A color encoding issue, a common problem when using a DVI display with an HDMI source. If you're using a splitter or an extender between your source and the link, make sure it handles EDID. If possible, force the source (for instance, a Blu-ray player) to output HDMI video with RGB color encoding instead of Component (YPbCr) video encoding.



Problem 4:

White noise or "snow" on-screen.

Usually caused by: An HDCP issue. This is actually what the encrypted video looks like. It happens when your display (or any active component, like an extender, used in the transmission) doesn't support HDCP. The display, in turn, isn't able to decrypt the video stream. Be sure to use equipment that supports HDCP.



Problem 5:

Flickering or unstable image.

Can be caused by: Electromagnetic or radio frequency interference, bad cable, or cable that's too long. These all can cause issues with HDCP or the signal, resulting in flickering or the video randomly disappearing then reappearing after a second. The solution: Use certified high-speed HDMI cables instead of standard HDMI cables, or if you need to go long distances, try an extender. If you're already using an extender, try changing to shielded CAT6 solid-core bulk cable.



▶ For more troubleshooting products, go to blackbox.co.uk

Choosing the right display



The most popular video display options

LCD

Liquid-crystal displays (LCDs) are today's most popular choice for flat-panel video displays. These low-power, flat-panel displays consist of a liquid containing crystals sandwiched between filtering layers of glass or plastic. When electric current is passed through the material, the molecules of the liquid crystal twist so that they either reflect or transmit light from an external source, usually a cold cathode fluorescent lamp (CCFL).

LED

LED displays are actually LCD TVs that use LEDs as their light source, instead of traditional CCFLs. In fact, these displays are often referred to as LED LCDs. LED displays tend to be brighter and perform better than LCDs, but they also tend to be higher-end models, which may have more to do with their superior performance than their technology.

Plasma

Plasma flat-panel displays use small cells that contain electrically charged ionized gases, which fluoresce when electrically charged. Although plasma displays are waning in popularity and are available only in larger sizes—generally 42 inches and up—their deep blacks and high contrast ratios make them a good choice when implementing large displays that are intended to be eye-catching.

Professional grade vs. consumer grade

When selecting a video display, you may find that “professional grade” or “commercial grade” models cost significantly more than televisions you can buy at the local “mega mart.” The primary difference is that professional-grade displays are built to stay on 24/7 for weeks and months at a time without breaking down. They may also offer features such as video-wall processors, scheduling options, and lockable control panels not normally found in consumer-grade televisions.

Other video display options

CRT

Older cathode ray tube (CRT) displays are still around; usually they're older analog TVs or VGA monitors. They're bulky, offer low resolutions, and look very dated but can be a low-cost option in areas where appearance is secondary.

Projected

A front or rear LCD/DLP projector is a compact device that projects an image on a screen. These devices are handy for trade shows, meetings, or anywhere it would be impractical to bring along a full-sized monitor.

OLED

Organic light-emitting diode (OLED) displays are the displays of the future. They're lightweight, thin, and energy-saving but not yet available at a price that makes them practical for general use.

Video-wall specific displays

These can be LED video cubes or rear-projection cubes that are designed to be stacked on one another for a virtually seamless video wall display.

Factors to consider when choosing a display

Picture quality

Plasma displays reproduce color more accurately with deeper blacks and display moving images with remarkable clarity. They provide excellent performance with their high-contrast levels and color saturation, and have the edge when it comes to viewing angles. In fact, plasma screens have as much as a 160° viewing angle, whereas LCDs display at 130–140° angles. However, they also carry the risk of image burn-in (the permanent disfiguring of a screen image caused by the continuous display of a high-contrast object).

LCD displays, on the other hand, don't have quite the color accuracy of plasmas, but they're brighter and have a sharpness advantage with a higher number of pixels per square inch. These additional pixels make LCD technology better at displaying static images from computers or VGA sources in full-color detail. Applications with large amounts of data and written material display particularly well on LCDs. What's more, there's no risk of image burn-in.

Durability

With LCD screens, there are essentially no parts to wear out. They last as long as their backlights do, with displays lasting, on average, 50,000–75,000 hours. That's why LCD screens are especially good for applications such as digital signage or displays that require around-the-clock use.

Plasma screens, however, use a combination of electric currents and noble gases (argon, neon, and xenon) to produce a glow, which in turn yields brilliant color. The half-life of these gases, however, is only around 25,000 hours. The glow they produce grows dimmer over time. They're also prone to burn-in or ghosting of images, although this is less of a problem with newer models.

Power consumption

Early plasmas had a very high power consumption; some as high as 5W per square inch. These values are now down in the 0.3–1.0-watt range, depending on screen size. LCDs typically run in the 0.1–0.3-watt per square inch range, and LEDs are even lower. Manufacturers are now required to provide power consumption information, but keep in mind that there are two values for consumption, default and calibrated, so be sure you're comparing like values.

Making the choice

In general, plasma produces a clearer picture with a wider viewing angle and a better response time for fast motion playback, making it a good choice whenever you need a large screen to show a very visually active display, for instance, in applications displaying sports footage or active advertisements.

LCDs are better at displaying detailed, static information. Because LCDs are brighter, they're ideal for venues with lots of ambient light. They're also the best choice for 24/7 applications because of their lower power consumption. For these reasons, LCDs are preferred for professional AV display installations.

Using a video display to your advantage



Orientation

Most video displays are rectangular, so you have the option of mounting them horizontally (landscape) or vertically (portrait). Although the horizontal configuration is far more common—probably because people are used to seeing TVs like this—a vertical video screen can make a striking display. Also in some situations, such as when mounting a display on an architectural column, a vertical display is more practical.



Horizontal
(Landscape)



Vertical
(Portrait)

Common display configurations

Individual video screens

The most common digital signage application is individual video screens displaying information. Often multiple screens in various locations are networked through a digital signage system, so they all show the same information and can be updated at the same time.

Touchscreens

The same technology you see at ATMs and information kiosks can supplement your digital signage setup when you want to give the viewer the ability to get information on demand. You can use standalone touchscreens or touch bezel overlays that affix to existing plasma or LCD screens and make them interactive.

Touchscreens actively engage people and interact with them, making them an ideal medium for advertising and distributing information.

Video walls

A video wall of four, six, nine, or even more video screens working together to make a single display saves money as compared to a single very large screen. These large, tiled video displays are frequently used in public areas such as stadiums, airports, and shopping malls.

Screens designed for use in video walls have narrow bezels to minimize gaps between active display areas. They usually have connections to daisychain power and video signals between screens to simplify cabling. Although large video walls require special controllers, small video walls can be set up just using multimonitor video cards.

KVM-switched tiling

Some KVM switches enable you to tile images from as many as four video cameras and/or computer screens on a single display while providing control over individual windows. This application is often used in security or control-room situations.

Great places to deploy digital signage

Endcap digital signage

Retail stores are ideal locations for eye-catching digital signage. Displays in endcaps can advertise specials and highlight new products. An interactive touchscreen can help customers locate products, offer serving suggestions, show demos, and help with sizing.

Transit

Riders on public transit—whether trains, buses, or taxis—can be informed of schedules, fares, and service changes. They appreciate having a news scroll and weather information to keep them up on things. This is also a perfect venue for advertising aimed at the busy commuter.

Store windows

A rear LCD/DLP projector can project messages and images on an acrylic projection screen in a store window, providing an animated alternative to a static window display. Or project messages as 3D images with a laser hologram projector.

Restaurants and cafeterias

Digital signage is ideal for displaying menus and the day's special, complete with pictures so guests know what to expect. The addition of a touchscreen ordering system speeds service and cuts down on labor costs.

Museums

Museums often take advantage of digital signage to provide history and background about their exhibits. Touchscreen signage enhances visitors' experiences by enabling them to interact with the exhibit.

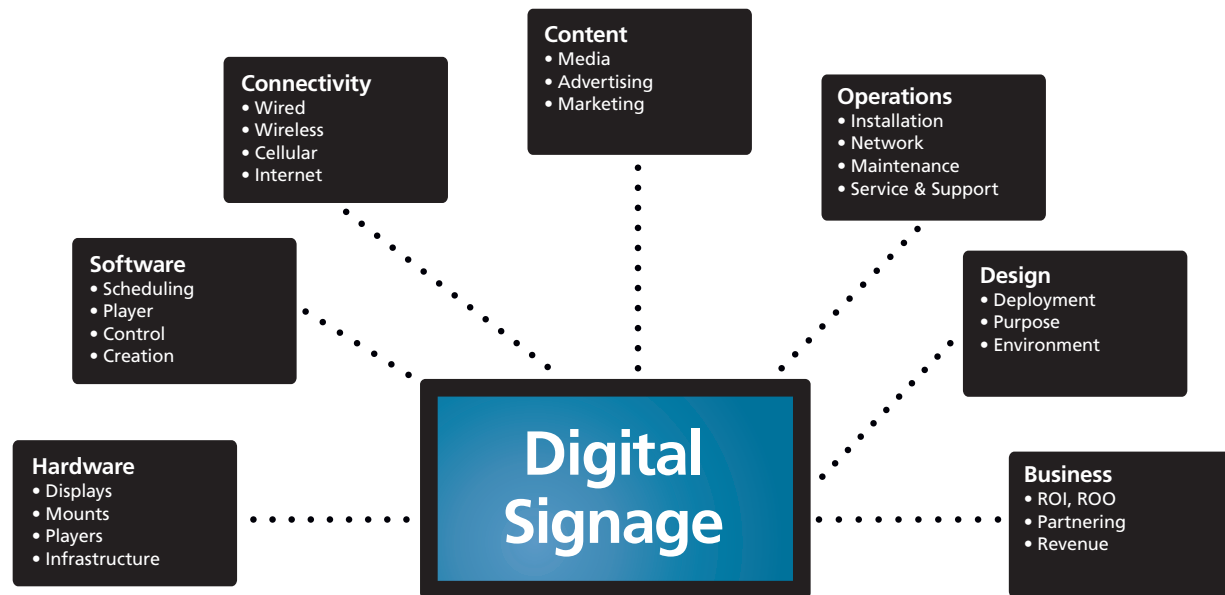
Petrol pumps

Interactive touchscreens provide prompts that enable customers to use their payment card and advertise specials on car washes or oil changes while customers fill their tanks.

Wearable digital signage

Forget boring name tags—your sales team can wear tiny LCD screens that show advertisements for your company or product on the sales floor or at trade shows.

The next step in the process: How to design an end-to-end system for compelling communications and maximum results



This guide devotes a lot of content to digital signage and how to set up AV distribution in support of digital signage rollouts.

But digital signage can truly be an enigma. Today, it seems to be all around us in forms as diverse as interactive flat-panel displays, signs the size of buildings, and, most recently, on mobile devices we carry around with us.

The concept is clouded by the overabundance of terms describing it: digital out of home (DooH), captive audience networks, in-store media, and video advertising networks, to name a few of the more popular references.

Regardless of what it's called, there's one simple fact: Digital signage can be a very effective and surprisingly affordable communications medium for businesses and institutions of all types and sizes.

But if you're just getting started with a digital signage project—as well as designing the AV infrastructure behind the screens—you may be unsure of where exactly to begin and what all is needed to make it happen.

This is because there are disparate “parts” of any digital signage project. These parts can become a tangled web of technologies if not understood as standalone elements and then as a whole as they will exist in a digital signage system. Each element converges with one another, and understanding the interaction between the parts is mandatory.

The diagram **above** shows the 7 Key Elements of Digital Signage to help clarify how everything's connected. Keep in mind that every digital signage system contains all the key elements in one form or another and if an element is ignored, it can become the weak link in the chain.

For help understanding what you need for a successful digital signage deployment, just give us a call.

No one is better suited to bring you the total solution than Black Box. We're your total provider no matter:

- Where you are at in the deployment cycle.
- What your level of technical or creative expertise is.
- The size of your business or organization—and your budget.

Why you should get digital signage.

No other medium makes it possible to deliver compelling content at the right location at the right time for maximum impact. It works whether your goal is to:

- Increase sales and profits.
- Communicate additional benefits of a product or service.
- Inform, educate, notify, or alert, and encourage certain behavior.
- Satisfy customers or employees.
- Improve business processes.
- Or all the above.

Now much easier to get and manage.

Digital signage is more affordable and easier to implement than ever before. Rolling it out used to be a daunting task, involving tons of planning and resources, with mixed results. Not anymore. Businesses can now:

- Benefit from a choice of content layout and design tools, empowering you to create truly professional-looking presentations.
- Get up and running with minimal or no training.
- Easily manage your digital signage from any browser-based connection.
- Pay up front or as you go—whichever suits your needs and budget.
- Integrate it into an existing IT network without replacing equipment.

How its flexibility benefits you.

With today's signage technologies, you can:

- Create welcome messaging, menu boards, and wayfinding screens.
- Share information faster, including announcements and schedules.
- Improve the customer in-store experience and target them in real time.
- Use existing content to create compelling messaging.
- Integrate live video and Internet feeds like stock and news tickers, so you're not forced to create all the signage content by yourself.
- Use all sorts of media, including photos, illustrations, stored and live video, and audio file formats.
- Update content on the fly from any computer with an Internet link.



Get Best Practices for Digital Signage Content.

Content truly is king, and at the start of any digital signage project, it's important for you to understand what kind of content works best for a particular venue.

Learn more about the content development process by reading our new white paper: *Best Practices for Digital Signage Content*.

To sign up to receive this white paper, visit blackbox.co.uk



MediaFlyer Hosted

iCOMPEL SMB

iCOMPEL EDS Enterprise

iCOMPEL WDS Wearable

Display Enclosures

Touchscreens & Displays

Digital Video Extenders

Analog Video Extenders

Baluns

Video Splitters

Video Switches

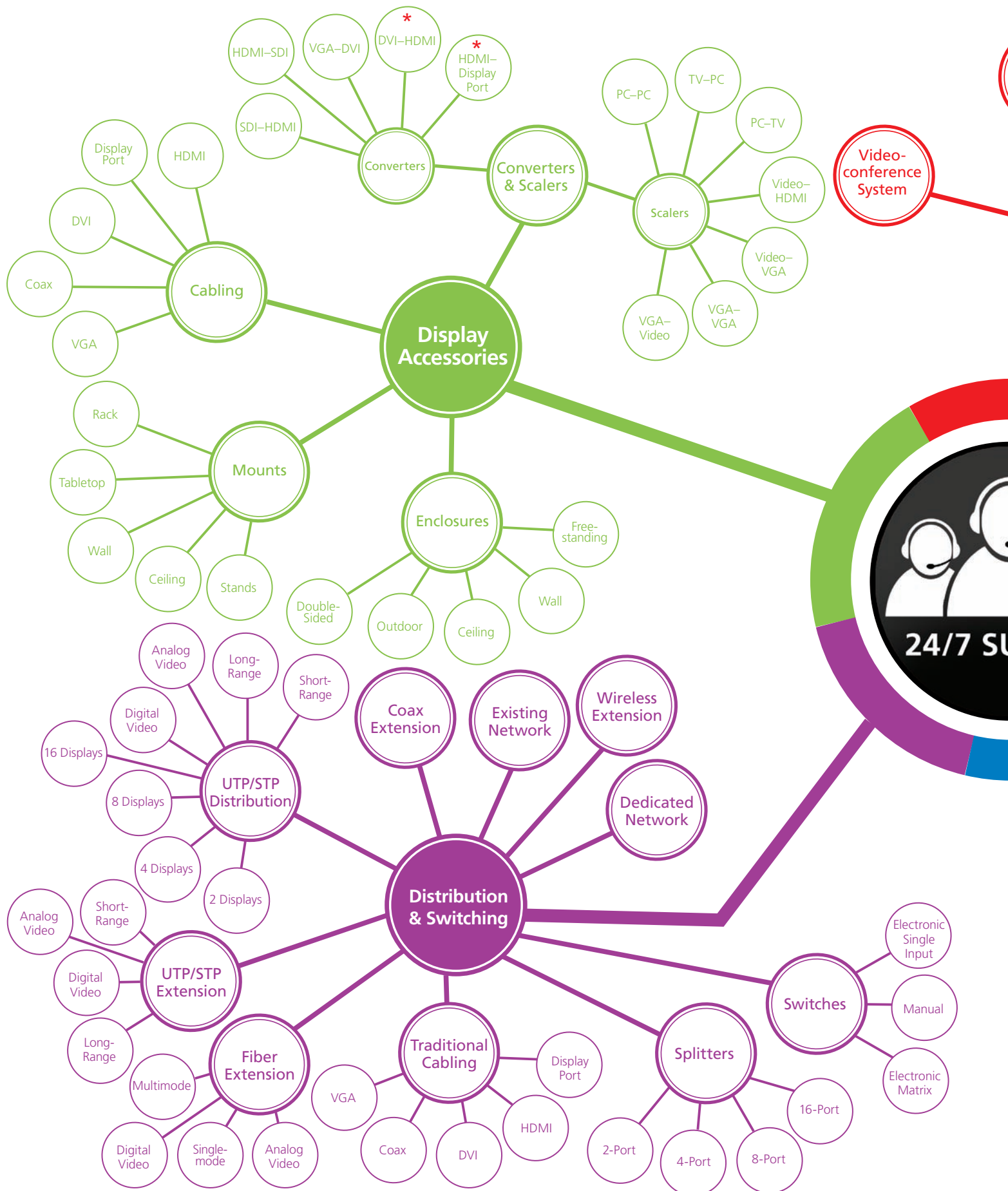
Video Scalers, Converters, & Adapters

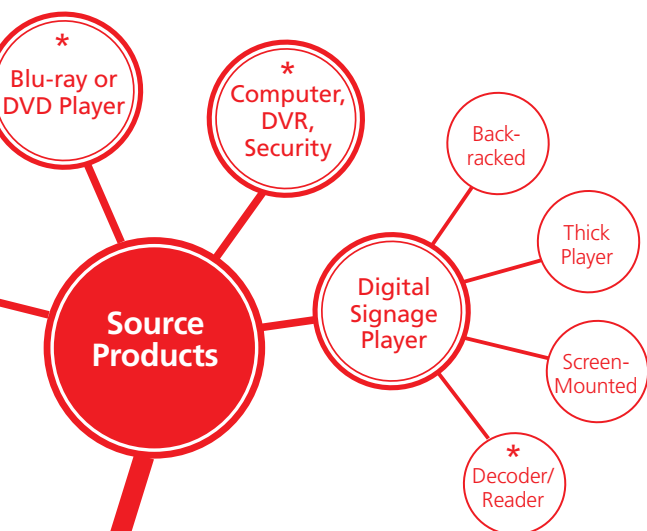
Legacy Solutions

Meeting Room Solutions

Cabling

Power Protection





All the interacting parts:

Source Products

Where your multimedia files originate from and, in some cases, where they're optimized for distribution and display.

Source Accessories

Products for connecting and storing source electronics, as well as for encoding source signals for effective distribution.

Distribution Products

What's needed to extend and route multimedia content between source(s) and displays(s) in professional AV environments.

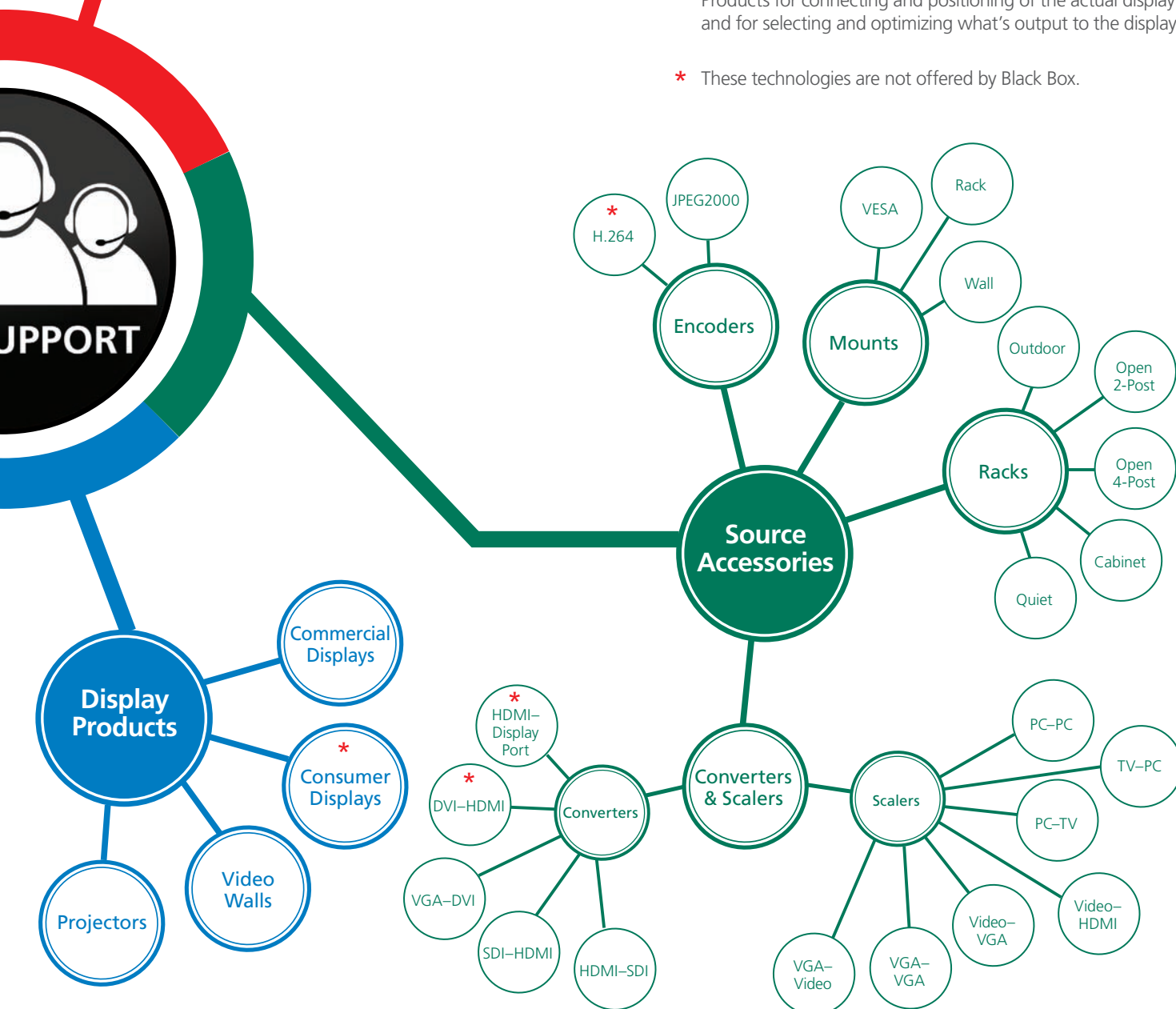
Display Products

Any technology used to show your video and graphics. Where your audience interfaces with your multimedia.

Display Accessories

Products for connecting and positioning of the actual display(s) and for selecting and optimizing what's output to the display.

* These technologies are not offered by Black Box.



Take your HD digital signage, kiosk, and/or video applications where they need to go with Black Box's end-to-end solutions!

Let our signage, kiosk, and video distribution experts help you find the right technologies to deliver pixel-perfect performance. With more than 400 years of combined expertise, Black Box can help you every step of the way.

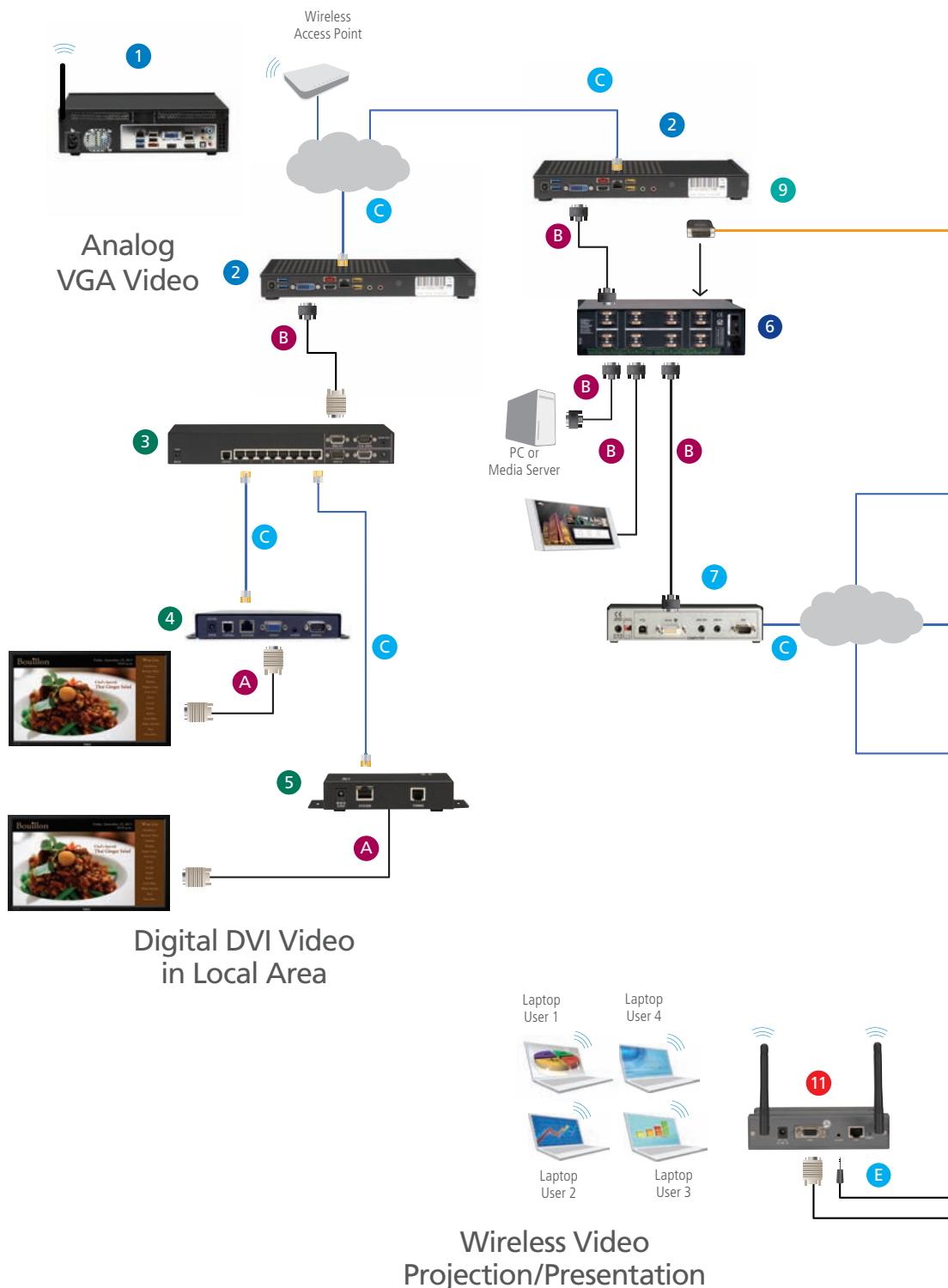
We're your source for digital signage platforms, and we're the industry-leading provider of everything behind the screens. And we mean everything — AV splitters, extenders, switches, converters, scalars, enclosures, and more.

Plus we have all the cabling and accessories you need to integrate your video system into your existing IT infrastructure. Not only are we knowledgeable about today's latest AV distribution technologies, but we know IT networks, too. We've been handling IT for well over 30 years.

What's more, our huge product selection includes many solutions for extending HD video over IP networks without any video loss. The diagram at right shows how just some of our products work together to distribute both analog and digital video.

Also see blackbox.com for our:

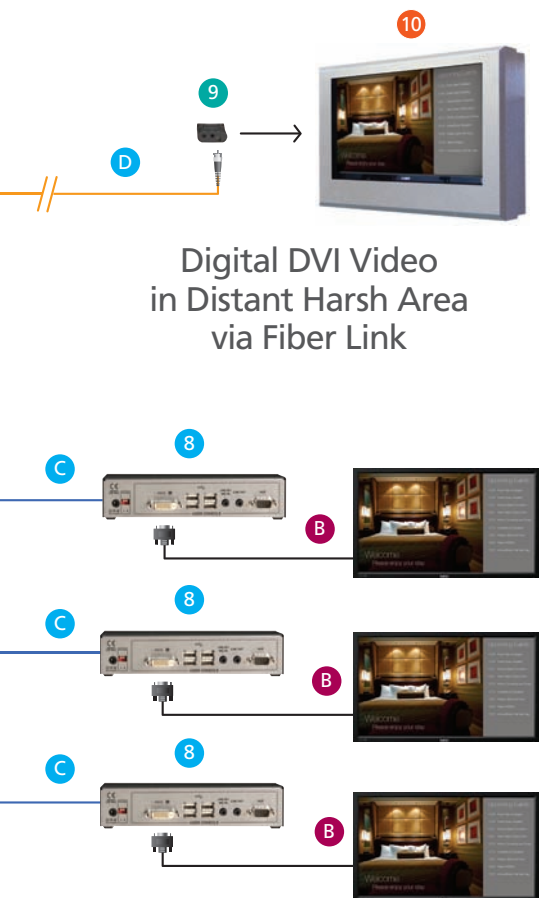
- Network switches
- Ethernet extenders
- Wireless networking solutions
- Media converters
- Network backup switches
- Access control solutions
- Console and terminal servers
- IT cabinets and racks
- KVM switches and extenders
- KVM trays for the server room
- Industrial-grade communications solutions
- Converged VoIP platforms
- Testers and tools



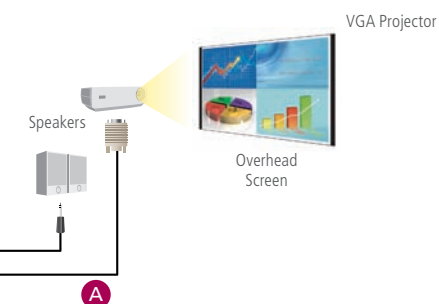
Technologies featured in diagram:

- 1 **iCOMPEL™ SMB Publisher (ICPS-2U-PU-W)**
Use to distribute HD content over the LAN to your signage; shown with the optional Wi-Fi module installed.
- 2 **iCOMPEL Subscriber Players (ICPS-VE-SU-N)**
Receive HD content distributed over the LAN.
- 3 **HD View™ 8-Port Transmitter (AC3008A-R2)**
Broadcasts high-def analog VGA video (plus serial signals and audio, if necessary) over CATx cabling to multiple locations.
- 4 **HD View Receiver (AC3003A-R2)**
Receives VGA video (plus serial signals and audio) over CATx at distances of up to 360 feet.
- 5 **HD View Long-Range Receiver (AC3004A-R2)**
Receives VGA video (plus serial signals and audio) over CATx at distances of up to 1000 feet.
- 6 **DVI Matrix Switch with Audio (AVSW-DVI8X8)**
Routes HD video from up to eight DVI sources to as many as eight DVI devices — with any input directed to any output.
- 7 **ServSwitch™ Agility DVI, USB, and Audio Extender over IP, Transmitter (ACR1000A-T), see blackbox.co.uk**
Multicasts video (plus audio, if needed) over an IP network, distributing perfect digital video with no loss.
- 8 **ServSwitch Agility DVI, USB, and Audio Extender over IP, Receivers (ACR1000A-R), see blackbox.co.uk**
Receive video (plus audio,) over an IP network, delivering high-quality DVI video content to digital screens.
- 9 **Mini Extender Kit for DVI-D and Stereo Audio over Fiber (AVX-DVI-FO-MINI)**
Extends DVI video (and audio) up to 1.5 kilometers over a single strand of fiber optic cable (kit includes both a transmitter and a receiver).
- 10 **Display Enclosure for 50"–52" Display (ENC-52)**
Protects expensive displays and circuitry indoors and out without obscuring clarity of video (other sizes also available).
- 11 **Wireless Video Presentation System III (AC1132A)**
Turns a wired VGA projector into a wireless one, enabling up to 254 laptop users to wirelessly project video presentations.

Digital DVI Video in Distant Harsh Area via Fiber Link



Digital DVI Video in Distant Area via IP Link



Cabling available:

- A Analog Video**
VGA and Component cable

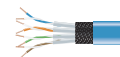


- B Digital Video**
DVI, HDMI®, DisplayPort: standard or adapter

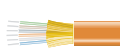


- C See blackbox.com for:**

- CATx**
CAT5e, CAT6, patch, bulk, premium, or value priced.



- Fiber Optic**
Single-mode, multimode, patch, bulk, or cut to length.



- Audio**
Deluxe RCA and 3.5-mm stereo and speaker wire.



- Coax**
Bulk, standard, and customs for CATV and baseband runs.



- Serial**
RS-232 standard or extended distance, office, or industrial.



- CATx Specialty Patch**
SpaceGAIN™ for tight areas and LockPORT™ for secure plug-ins.



- Plus:**
- Custom cables
 - Hard-to-find cables
 - Connectors and adapters
 - Wallplates and jacks
 - And many other cabling accessories.

What to consider when planning your digital signage application and evaluating the different platforms

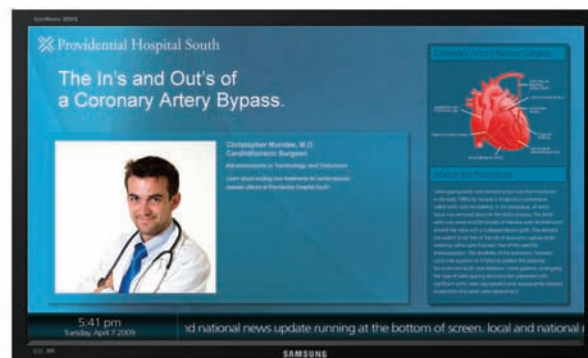
Our end user-focused, consultative approach. At Black Box, we're experienced at putting users in touch with a digital signage solution that fits their needs. We don't provide one-size-fits-all products; we provide systems for your exact needs—nothing more, nothing less.

To be sure you're matched to the right platform, we highly recommend speaking with us by phone. But before you call, we advise you to try to answer as many questions as possible below, check off what features you think you might need, and take a look at the chart on the **facing page**. The chart provides a quick comparison of each platform's mode of delivery and features (for more detailed platform descriptions, see the subsequent pages in this guide).

11 quick-start questions to answer:

1. How many screens do you intend to have?
2. Will the screens have the same or different content?
3. How many locations, and what are the distances to these locations?
4. Who is the audience who will be viewing the signage?
Customers, employees, visitors, or all of these groups?
5. What information do you want to communicate?
Advertising, current information (news, weather, internal data), personalized messages ("Welcome, Mr. Smith"), instructions (directions, schedules)?
6. What is the purpose of this installation?
Selling a product or service, informing an audience (wayfinding), entertaining the viewer (i.e. those waiting in line), reinforcing a theme?
7. What existing media assets do you want to redeploy?
Web information, system data (inventory or production numbers), existing ads (video, print, Web formats), and/or live TV feeds?
8. Where does information come from, and from how many contributors?
Do multiple people/departments need to submit information, and if so, where are they located? Who is the "owner" of information? Are third-party suppliers involved (for instance, an ad agency)?
9. How often will this information be updated?
Constant updates (system status, live messages, etc.) or periodic updates (for instance, video files with low refresh cycles)?
10. What types of displays will be required?
What sizes, resolutions, and screen orientations?
11. How will the monitors and digital signage players be mounted?
On the ceiling, wall, or floor, or in a rack?

At right: A matrix of four screens showing a single image. Not all platforms support this. You may need additional equipment if your displays do not support the tiling function natively. For details, contact our FREE 24/7 Tech Support on 0118 965 6000



Buyer's Checklist

- ✓ Do you want a live TV feed?
- ✓ Want to stream IPTV content through players?
- ✓ Need to fast forward or toggle between presentations and control volume at the screen?
- ✓ Need to stream content to a subscriber wirelessly?
- ✓ Do you need your signage to have interactive touch?
- ✓ Do you need to capture pure HD video content?
- ✓ Want to use the appliance as a media server?
- ✓ Need to support many players in many time zones?
- ✓ Will you be using mostly social media for content?
- ✓ Will you need to render professional-quality Flash?
- ✓ Because of security or space issues, do you require the player to be installed in the display itself?
- ✓ Do you want to install the platform on a server?
- ✓ Want to tile images across several screens?

Compare the features and capabilities of our digital signage platforms (as well as competing like-priced platforms):

Features & Capabilities		MediaFlyer™ EXPRESS	iCOMPEL™ SMB	iCOMPEL EDS	Other Platform You're Evaluating
Delivery modes	Multiple-role platform (publishers/players/subscribers)	—	•	—	—
	Enterprise-class platform (VMware® server software/subscribers)	—	—	•	—
	Scalable, Web-hosted management platform (Web site/subscribers)	•	—	—	—
Platform's player features and capabilities	Administration through a standard Web browser	•	•	•	—
	High level of security/VPS network manageable	—	•	•	—
	Supports multiple media formats within each playlist	•	•	•	—
	Support for multiple zones on a screen	•	•	•	—
	Multilayering and overlapping (z-index) of any or all zones	—	•	•	—
	Layering of zones with transparency and alpha blending	—	•	•	—
	Independent audio zone with audio level control	—	•	•	—
	Audio level controllable by player	—	•	—	—
	Multiplayer content synchronization	—	•	•	—
	Meta tagging available for players	•	•	•	—
	Detailed per-account/per-user security and settings	•	•	•	—
	Multiple simultaneous text rolls and crawls	•	•	•	—
	Imported or custom fonts	—	•	•	—
	Includes professionally designed layout templates	—	•	—	—
Graphic design features	HTML page capture capabilities	•	•	•	—
	Supports zones for data feed integration	•	•	•	—
	Supports right-to-left text (for certain language-scrolling requirements)	—	•	•	—
	Drag-and-drop control of images and graphical elements	•	•	•	—
	Maintains aspect ratio, stretching to fill or maintain native size, zone by zone	•	•	•	—
	Supports Adobe® Flash Version 10 or 11 (.swf)	11	11	10	—
	Layered zone capability with transparency	—	•	•	—
	Overlay text on top of images	—	•	•	—
	Use of block style text for RSS feeds and other streaming text	—	—	•	—
	Can be done in a single file upload through a graphical user interface	•	•	•	—
Content transfer capabilities	Drag and drop from a browser interface	•	•	—	—
	Can use FTP for multiple file upload	—	•	•	—
	Can be uploaded by a local user at the remote player ("ad-hoc")	—	•	•	—
	Supports XML Web feeds (RSS tickers, Atom, etc.)	•	•	•	—
Data exchange capabilities	LDAP/active directory support	•	•	—	—
	Microsoft® Exchange and Microsoft SQL Server support	—	•*	—	—
	Supports data feeds for ad networks	—	—	•	—
	Supports an API for use with applications for content and player control	•	•	—	—
Output modes	DVI and/or HDMI video output on subscribers/players	•	•	•	—
	Selectable rotation for portrait modes	•	•	•	—
	Customizable aspect ratios and resolutions	•	•	•	—
Video capabilities	Scalable, positionable graphics over live video and clips	—	•	•	—
	IP video streaming	—	•	•	—
	Set-top analog CATV video capture option	—	•	•*	—
	Digital HD video capture option	—	•	—	—
External control and support	Support for general-purpose input/output (GPIO) via RS-232 trigger mechanism	—	•	—	—
	Touchscreen capability for USB HID touch devices	—	•	•	—
	Drag-and-drop playlist creation	•	•	•	—
Scheduling capabilities	Multiple layouts, playlists, and schedules can be defined	•	•	•	—
	Schedule the turning on/off of displays	•†	•	•	—
	Global time zone support for payout at correct local times	•	•	•	—

* With additional software or equipment.

† Via power save mode.

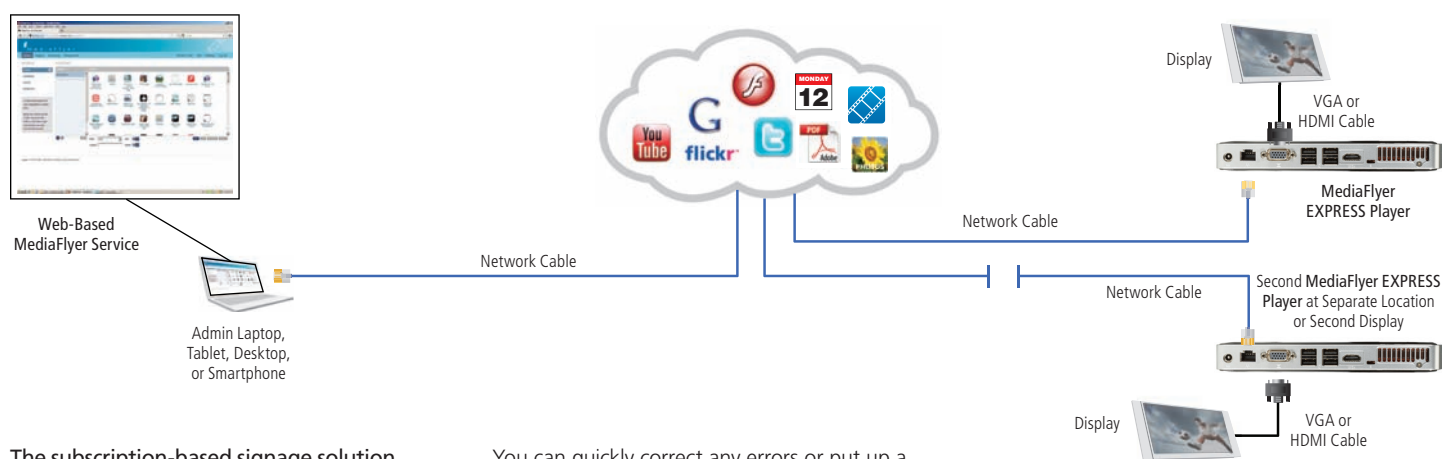
MediaFlyer EXPRESS Hosted Digital Signage

The affordable, easy-to-use digital signage system that leverages your

- Powerful system for companies with limited IT departments and creative resources.
- Advertise and improve communications to get an edge on your competition.
- Four steps to success: Connect and power your player(s); create and log in to your account; register your player(s); and add content.
- Design, schedule, assign, and share content from anywhere via the Web.
- Choose from predefined screen layouts or make your own.
- Schedule playlists to show content at specific times via a calendar or use our powerful mashup engine to automate scheduling.
- HD modes including 1080p, 1080i, 720p, and 720i, and VESA mode, too!
- Easy to scale from one site to many sites and one user to many users.
- Drag-and-drop scheduling for instant content updates.
- Lightweight, compact player with low power consumption.
- VESA-mountable player attaches to the back of a screen.
- Try it for FREE at mediaflyer.blackbox.co.uk
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years



MediaFlyer EXPRESS architecture



The subscription-based signage solution.

MediaFlyer™ EXPRESS provides ample functionality and satisfies a range of needs, whether you just want to show slideshows and Twitter feeds on one screen or if you need to support multiple players at multiple sites.

This simple-to-implement digital signage platform turns any user — the average office manager, business owner, or a system integrator — into a multimedia pro.

Loaded with features, MediaFlyer EXPRESS enables you to play many kinds of content, manage it from a network, and automate content playing for 24/7 viewer engagement.

It's ideal for business lobbies, doctors' offices, bars, restaurants, retail stores, schools, and virtually any location with Internet access.

And, unlike other subscription services, MediaFlyer EXPRESS keeps its player(s) continuously connected to its Web-based service, so content updates occur almost instantly.

You can quickly correct any errors or put up a special promo to take advantage of an immediate opportunity.

Your content displayed in 20 minutes!

MediaFlyer EXPRESS gives you all the features and functions you need to set up your signage. All you need is the screen. It combines a hosted Web service, player, and all the cables you need with a drag-and-drop interface, so everything falls into place. In little time, you'll have a display that attracts customer attention.

Store and play many types of content: Flash® files, PowerPoint® slideshows, live text, RSS news feeds, or any mixture of these in a layout of your design. The system uses a playlist, just like any other digital signage player, and the playlist loops back to the beginning when it's done. Don't want to be bothered with playlists? Then just set it up to run "mashups," with the system randomly displaying a mix of media on the screen.

Media formats supported:

- | | |
|--|--------------------|
| • Flash® (.swf) | • Calendar formats |
| • PowerPoint® (.ppt) | • Twitter® Wall |
| • MPEG 4 (.mp4, .m4v, or .mpg) | • Twitter Timeline |
| • QuickTime® (H.264 .mov) | • Flash clocks |
| • Windows® Media (.wmv) | • Flash widgets |
| • Ogg (.ogg) | • Weather apps |
| • GIF, TIFF, JPEG, BMP, and PNG still images | • Flickr® Importer |
| • PDF | • Flickr Search |
| • HTML elements | • Google® Trends |
| • Editable RSS feeds | • Tender Support |
| | • Timetric data |
| | • YouTube® |
| | • Webcams |

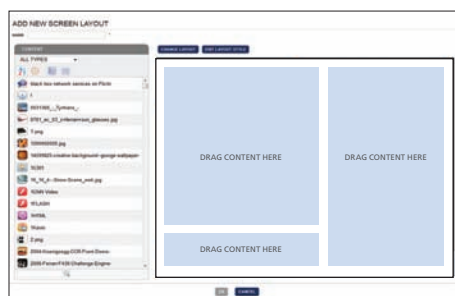
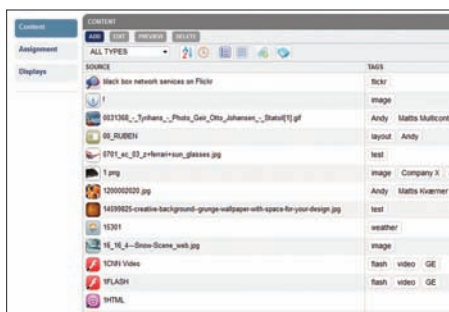
content, Web content, and social media



Getting started: It's easy as 1–2–3.

Step 1: Connect your player(s) to a display, the Internet, and power. The player registration information appears right on the display. Then create or log in to your mediaflyer.blackbox.com account and add your players and subscriptions.

Step 2: Upload content using drag-and-drop. You can upload files one of two ways: by clicking on +Add button and browsing to your files or by dragging and dropping the files from your machine directly to the portal's page (Google



Chrome® and Firefox® users only). The uploader shows you a thumbnail of the file and its size and gives you the opportunity to rename it.

Step 3: Assign content to a player or a group of players using drag and drop. The process for getting content to anywhere in the world normally only takes a few seconds. You can control the content being shown on any display anywhere in your organization individually, or you can set any number of your displays to show identical content.

Save time by using one of the preloaded, predefined layouts, or you can create your own using the intuitive layout tool. It enables you to divide a display into two or more areas and create a ticker or text crawl in a zone at the bottom. Add as many zones as you like, move them around, make them larger or wider.

For content placement, you can expand or contract an image until it fits within the pixels available. Or you can expand and crop the image to fit the screen or scale it horizontally and vertically so it fills the screen.

Content updates are automatically sent to the players without making a new schedule or reassigning it.

Plus, as an option, the system supports HTTP-based API programming for interfacing with SharePoint® and other data sources.

CE Approval — Yes
RoHS — Yes

Where it fits in our digital signage line:

- Ideal for businesses with minimal creative or IT networking expertise.
- No heavyweight publisher hardware to manage and secure; everything's done via the Web.
- For users who prefer flexible scheduling.

Other capabilities and features

- New users can be added manually, or invite them via e-mail.
- Multiple permission levels enable you to provide users with access to only the tools they need. The user interface adapts automatically for a great user experience.
- Assign content to one player or many players using drag and drop.
- Browser interface supports Java, PHP, ASP, CSS3, and HTML5.
- Compact, VESA-mountable player supports Gigabit speeds and wireless connectivity.
- Player identifies and adjusts to your display's preferred resolution.
- Plays Flash®, PowerPoint®, MPEG 4 (.mp4, .m4v, or .mpg), QuickTime® (H.264 .mov), Windows® Media (.wmv), Ogg (.ogg), and RSS feeds.
- Displays GIF, TIFF, JPEG, BMP, and PNG still images; PDF, HTML, and calendar formats.
- Social media integration (see **facing page** for all the various media supported).
- Caches content locally on the player for optimal performance.
- Diagnostic screen for easy troubleshooting.
- Supports portrait or landscape display orientation.

Item	Code
MediaFlyer EXPRESS Hosted Digital Signage Platform	
1-Year Starter Kit	MFLY-X01
3-Year Starter Kit	MFLY-X03
1-Year Subscription Renewal	MFLY-X01RE

Ring Sales or
Visit Our Website
For Pricing

 [Learn more at blackbox.co.uk](http://blackbox.co.uk)

iCOMPEL Digital Signage Platform for SMB

Set up impressive, attention-getting signage easily and affordably with

- An appliance-based solution that sets up *FAST* with all software preinstalled on the hardware.
- **FREE** updates and no ongoing subscription or licensing fees for a lower cost of ownership and shorter ROI.
- Easy to scale. Use standalone with one screen or across a network to supply content to multiple screens.
- Controllable via a standard Web browser connection.
- Includes **FREE** professionally designed screen layouts.
- Enables you to display a mix of zones showing images, text, HTML, RSS and XML feeds, plus multiple videos side by side!
- New versions for Wi-Fi connectivity, HD video capture, kiosks and interactive kiosks, plus pluggable players for sliding into a screen's Intel® OPS slot.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Deliver the right message at the right time for maximum results using iCOMPEL™. It's just what you need to assemble, distribute, and manage digital signage content easily in your small and medium-size (SMB) installation.

Best of all, iCOMPEL units work right out of the box with all software preinstalled. This way, you can get your digital signage up and running fast without having to load any software and navigate a sea of technical and broadcasting jargon.

And software updates, as well as technical support, are always free. By getting what you need upfront, you're not nickle-and-dimed year after year with ongoing licensing or SaaS fees.

With minimal setup required, iCOMPEL gives you a quick way to:

- Upsell, cross-sell, merchandise, and advertise.
- Create welcome messaging and wayfinding screens.
- Share information faster, including meeting announcements, event times, and up-to-the-minute schedule changes.
- Improve experiences for customers, visitors, and guests.
- Get daily information to internal staff for improved processes.
- Build and reinforce your brand or image.

Easy to get started.

You can install iCOMPEL publishers and subscribers on a network and manage them via a browser from any PC or Mac® on a LAN or WAN. One iCOMPEL publisher can send media over the network to iCOMPEL subscribers in another location.

To get started, you simply connect the iCOMPEL unit to your network and to a display. After booting up, the iCOMPEL unit automatically obtains an IP address from the network. Fixed IP addresses can also be set.

Now, it's time to get creative! Begin by dragging and dropping media from your computer desktop or a folder to the iCOMPEL media folders on the appliance's hard disk or use the user interface to browse for files.



Front view: iCOMPEL 2U P Series/S Series Publisher

iCOMPEL supports many formats, so you can combine video with scrolling text, photos, Flash, and Web content. It handles MPEG, AVI, QuickTime®, and PowerPoint® movies; JPEG images; WAV and MP3 audio; HTML; and more.

You can then create one or more screen layouts containing one or more zones—and even play video in multiple zones at the same time. For maximum video and Flash rendering capabilities, be sure to order our P Series iCOMPEL.

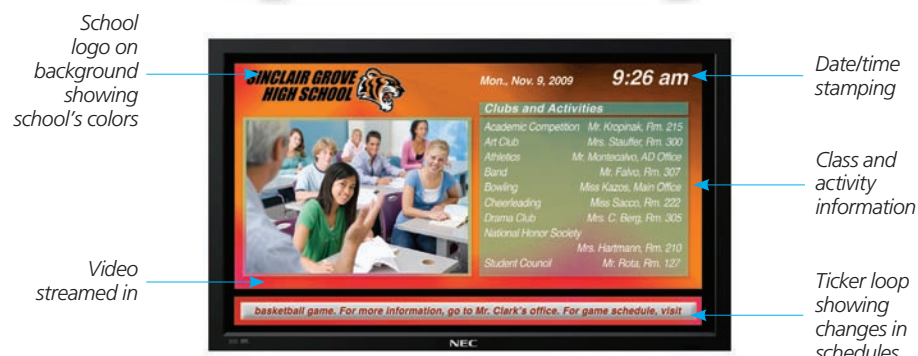
To show text from an RSS newsfeed, just enter the URL of the feed into the iCOMPEL. Use a similar process when you want to display actual Web pages and XML feeds.

A firewall built into iCOMPEL keeps access limited to authorized users only, and there's no need to install any third-party software or virus protection. Plus, it uses HTTP and HTTPS security protocols, and supports the LDAP application protocol and VPN capabilities for secure remote access.

Six compelling reasons for iCOMPEL

- It gives you the flexibility to create attention-getting digital signage without a lot of creative or technical know-how.
- It's scalable from one to multiple digital signage displays.
- It's an affordable, one-time investment with no ongoing fees.
- It keeps digital signage simple, and it's easy for beginners to master.
- It's easy to integrate; it won't cause IT and security headaches.
- It's from an industry leader with **FREE**, 24/7 technical support who can supply everything you need for end-to-end digital signage.

the award-winning iCOMPEL



Where it fits in our digital signage line:

- Integrated hardware/software solution.
- Use on a network or connect to it directly.
- Offered in publisher, kiosk, and subscriber versions for various levels of signage.
- Includes options for TV connections, HD video capture, wireless connectivity, streaming video, touch interactivity, and remote control.
- Also available in an OPS version for installing within the screen itself.

Ideal for a number of applications

In a lobby or reception area, iCOMPEL digital signage strengthens communications for businesses and institutions. Our list of satisfied iCOMPEL customers includes hospitals, hotels, universities, manufacturers, and many others (to read how these and others have benefited from iCOMPEL, visit blackbox.com/go/CS).

For many, they cited the number of features for the money and ease of use as reasons why they chose iCOMPEL. And because it's widely compatible with many types of media, there's no need to create and reformat existing media for uploading to iCOMPEL.

Used in a K-12 or higher-ed environment, iCOMPEL provides a simple-to-integrate platform for informing and notifying students and staff in buildings or on a campus. With the iCOMPEL, it's easy to build eye-catching signage without adding any technical or creative staff.

Even better, it can be used to stream content to signs in hard-to-cable areas. Just order a Wi-Fi-enabled iCOMPEL. This 802.11a/b/g/n version is ideal for applications where wired connections aren't possible and for redundant wired/wireless links to screens.

Loaded with tools for...

- Drag-and-drop layout and zone manipulation.
- Automating payout, setting up channels to show different content on different screens.
- Scheduling layouts to play at different times.
- Giving every zone in a layout its own playlist.
- Monitoring remotely over an IP network.
- Linking to external info, such as Web content.
- Linking to internal info for local content updates.
- Pulling down content from an FTP file server.
- Updating messages locally at the screen.
- Interrupting payout for emergency alerts.
- Streaming HTML content from a Web server.
- Triggering content by GPIO input signals.
- Importing and customizing fonts.
- Troubleshooting digital signage.
- Securing access.
- System monitoring.

iCOMPEL Digital Signage Platform for SMB (Continued)

Software features:

Sophisticated layout tools

The publisher and kiosk models include a number of free layouts, so you can be up and running, displaying your choice of content in a professionally designed format within minutes.

Or you can create your own. The intuitive layout and design tool makes it easy to create layouts. Adjust, resize, position, and layer zones with a simple click and drag. Also, you can manually set pixel or percentage measurements to achieve pixel-accurate alignment or lock a movie zone to a desired aspect ratio (16:9, 5:4, or 4:3).

Set up one or more screen layouts containing one or more rectangular zones for display, either in a portrait or landscape screen configuration. You also get the flexibility to format text so it's consistent with the look and feel of your business' branding. That's because the iCOMPEL supports importing custom fonts. You can set their style, weight, and color, as well as control their scroll speed and direction on a screen.

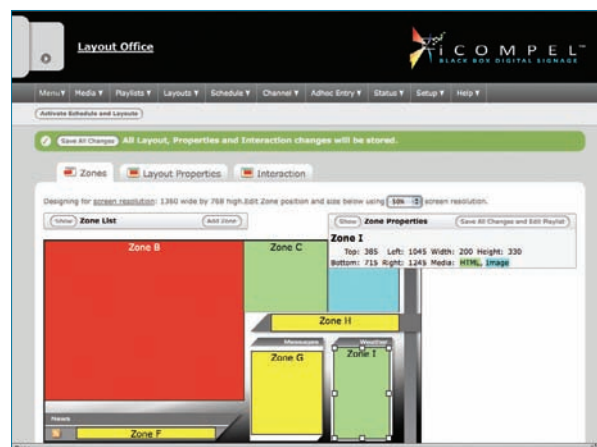
Schedule playlists for different times of the day

All iCOMPEL publishers can be used to control multiple content channels. This way, you can deliver a high-impact display to the particular audience or segment of customers before you, whether you need to show stored or live media.

Every zone in the display layout can run on its own schedule. When you activate a schedule, the relevant media will appear, as laid out, on your display. Different layouts can be scheduled to play at different times of the day. Each playlist runs in a continuous loop per a preset schedule.

You can also show a video file stored on its internal disk (or on models with a TV or HD video capture card, you can show live video), show text from an internal feed, and more. Using the RSS subscriber features, you can easily display text crawls from the Internet—which is great for streaming news or stock tickers.

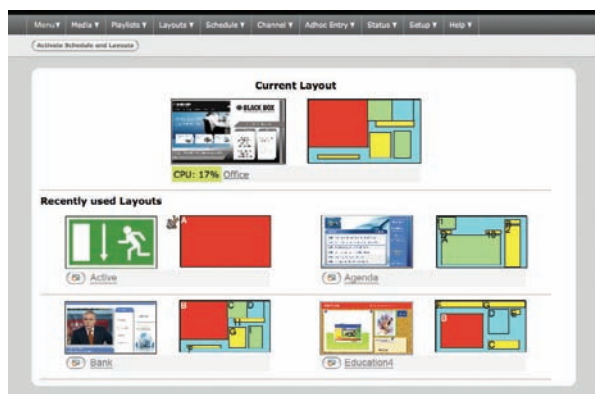
Plus, purchase the GPIO adapter and all iCOMPEL units will support general-purpose input/output (GPIO) capabilities so content playing can be triggered (or halted) by signals originating from external device inputs. Attach a motion sensor, for example, and program the system to activate a screen when the sensor detects someone approaching—great for saving energy and extending screen life. Or set it up to provide emergency notification based on a signal sent when a secure door is opened or when an environmental condition occurs.



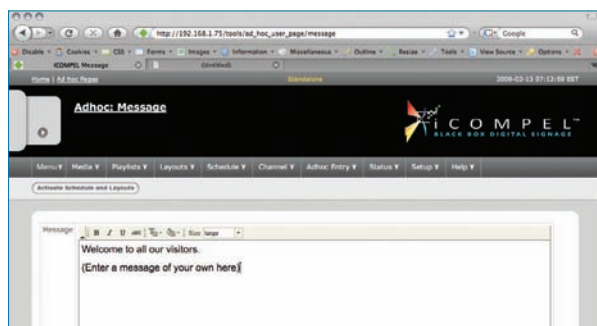
Resize and position items in precise increments or click and drag. Overlap and make zones transparent. iCOMPEL supports unlimited zones for text or still images, up to 15 zones for HTML, and either two or four zones for video (depending on the model ordered).



Activate scheduled content delivery from the playlist interface.



Includes FREE layouts. Customise them how you like!



Update messaging in real time with "ad-hoc" capabilities. A customised welcome message (like that shown above) can be added for the specific site where the iCOMPEL subscriber is located, replacing the default content in a screen presentation.

Typical setup:

Use for a standalone application...

iCOMPEL units work in one of three roles:

- As a kiosk player, to itself; can create and play but not publish.
- As a publisher, through which you can create layouts, manage playlists, then publish one or more channels to itself as an FTP client or to a USB storage device or an external FTP client. It sends a snapshot of all required files to an FTP file server at a preconfigured location in your attached IP network.
- As a subscriber, pulling down new content and instructions from an FTP client, a USB storage device, or another iCOMPEL unit.

In a basic kiosk setup, a single iCOMPEL connects directly to your network and to your display device.

Accessing the device can be done one of four ways: via a Web browser by providing an IP address along with a name and password; via an FTP client by providing a name and password (for uploading content to the iCOMPEL unit); or via Secure Shell (SSH) by giving an IP address and root password.

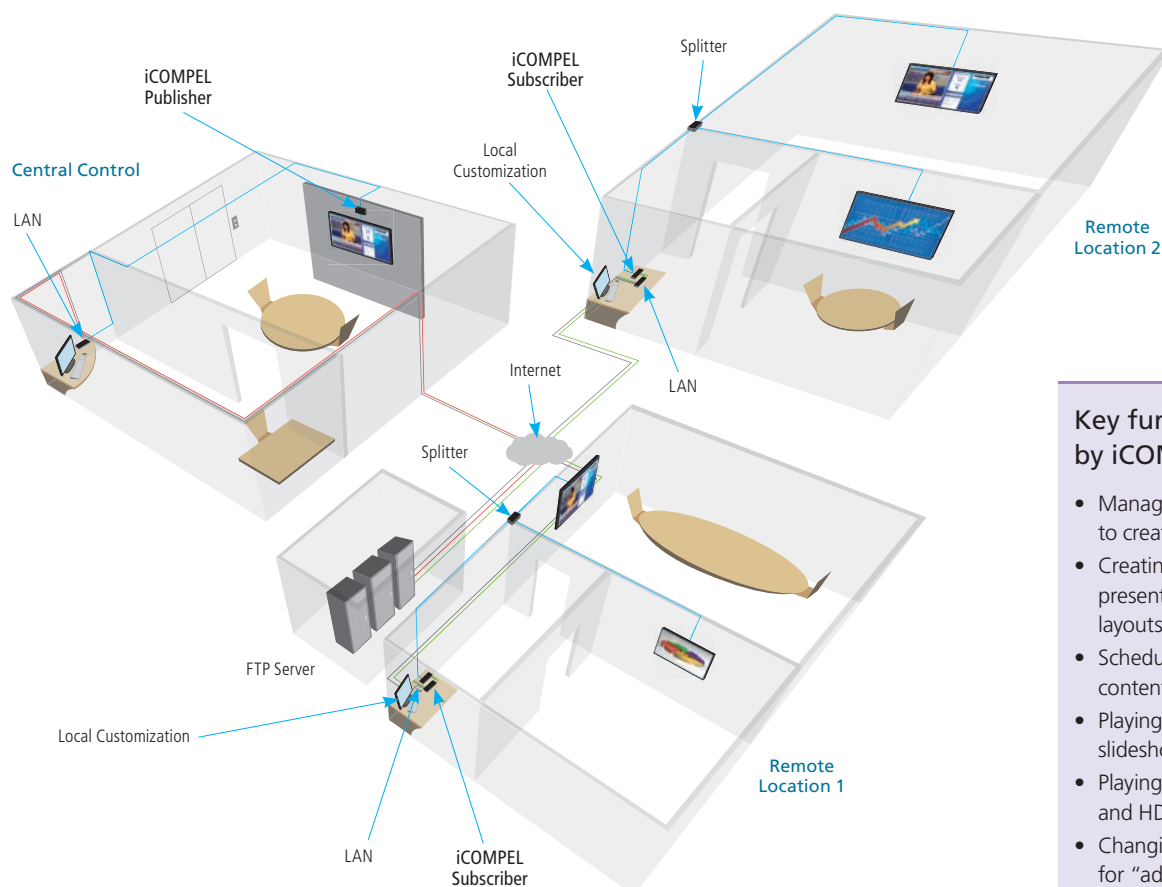
... or in multiscreen, multisite applications

The iCOMPEL units function as kiosk players, as publishers, or as subscribers in more elaborate multisite deployments, too.

Used in a multisite application, however, iCOMPEL clones its media from another iCOMPEL over a network, acting as a channel manager, with the same digital signage presentation showing on screens at different sites at specific times.

When working as channel subscribers, the iCOMPEL units automatically download and show a channel that's been published by another iCOMPEL unit. The subscribers poll the publisher periodically for changes that may have been republished, downloading new content and deleting old content automatically.

You can also log into each subscriber and customize content on an "ad-hoc" basis. All iCOMPEL units support this, but it's particularly useful in multiscreen setups where you want to locally update screen content to issue alerts or customize messaging for specific audiences.



In a typical multiscreen, multisite application, you designate one iCOMPEL unit as a channel publisher and other units as subscribers. You then publish your latest schedule as a collection of files on a channel server (either the iCOMPEL itself or an Internet file server). Subscribers then download all files from the channel server and run content according to the new schedule.

Key functions performed by iCOMPEL:

- Managing of media files used to create content.
- Creating a number of content presentations with various layouts.
- Scheduling the distribution of content presentations in playlists.
- Playing stored media, including slideshows and recorded video.
- Playing live video (on TV capture and HD capture models).
- Changing content at the screens for "ad hoc" messaging.
- System monitoring and troubleshooting.

[Learn more at blackbox.co.uk](http://blackbox.co.uk)

iCOMPEL Digital Signage Platform for SMB (Continued)

Build a system according to your requirements for video, Flash, interactive touchscreens, and more



2U publisher or subscriber chassis
(available for the P Series and S Series only).



P Series 2U publisher or subscriber with HD capture card.



S Series VESA publisher or subscriber.



O Series Intel OPS publisher or subscriber.

Media supported:

- JavaScript®
- PowerPoint® movies
- Flash 11
- Real™ 1, 2, 3, 4
- MPEG 1, 2, 4 (DivX®)
- QuickTime®
- AVI
- MP3 and WAV
- GIF, TIFF, JPEG, BMP, and PNG
- Static or scrolling text
- HTML (set up one or more zones as a Web page from an existing Web server or an intranet)
- XML feeds
- RSS subscriber feeds
- Live video on certain models:
 - Up to 640 x 480 video via S-Video and Composite connectors on the models with a TV capture card (ATSC for North America; DVB-T for most other areas of the world)
 - HD video via the HDMI port on models with an HD video capture card

Series Description and Features:

P Series

- Our highest-performing system for high-quality SMB signage.
- Displays intense content: Flash at >20 fps and video at >30 fps.
- Ideal for showing video in up to four zones simultaneously.
- Supports the display of professional-quality Flash alongside video, static images, HTML, XML, RSS Web content.
- 2U models have large capacity (500 GB HDD) to store your digital signage content library (VESA models: 40 GB SSD).

Featuring the highest processing power of all iCOMPEL versions, the P Series provides smooth video payout and rendering of professional Flash.

To play live video from digital sources, order versions with HD video capture. They provide pure digital connectivity via HDMI input.

S Series

- Our standard-performing system for SMB signage.
- Robust processor for optimized content (Flash at <20 fps and video at <30 fps).
- Ideal for showing two video zones simultaneously.
- Supports the display of optimized Flash alongside of video, static images, HTML, XML, and RSS Web content.
- Feature 500 GB HDD (2U) or 40 GB SSD (VESA) storage.

This series supports up to two video zones playing at the same time and is for users who plan to use their own in-house graphics and PowerPoint movie files alongside Web content.

You can even order S Series subscribers to receive content from a P Series publisher in instances where certain screens don't need to show video- or Flash-intensive content like other screens in your application.

To also play live video, order a unit with a built-in TV capture card or a version with an HD video capture for HDMI input.

K Series

- Standalone players for single-screen kiosk applications.
- Enables playing of video in two zones simultaneously.

This economically priced, VESA-mountable player supports simple one-display signage applications without any requirements for more than two video zones or Flash.

K Plus (Interactive) Series

- Standalone players for single-screen or touchscreen uses.
- Enables playing of video in four zones simultaneously.
- Processor supports Flash at >20 fps and video at >30 fps.

This VESA-mountable player is touch enabled for use in single-display, kiosk applications requiring high-quality video and Flash content.

O Series

- Modular units for convenient installation in an HDTV with an Intel® Open Pluggable Specification (OPS) slot.
- Enables playing of video in four zones simultaneously.

These publisher and subscriber units suit applications where you want all digital signage computing integrated into your display.

All publishers work with all subscribers, no matter what series they are!

Series and Prices

Item	Code
P Series	
2U Publisher Unit	
Standard	ICPS-2U-PU-N
with Wi-Fi	ICPS-2U-PU-W
with TV Capture (ATSC)	ICPS-2U-PU-N-A
with TV Capture (DVB-T)	ICPS-2U-PU-N-D
with HD Video Capture	ICPS-2U-PU-N-H
VESA Mountable Publisher Unit	
Standard	ICPS-VE-PU-N
with Wi-Fi	ICPS-VE-PU-W
2U Subscriber Unit	
Standard	ICPS-2U-SU-N
with Wi-Fi	ICPS-2U-SU-W
with TV Capture (ATSC)	ICPS-2U-SU-N-A
with TV Capture (DVB-T)	ICPS-2U-SU-N-D
with HD Video Capture	ICPS-2U-SU-N-H
VESA Mountable Subscriber Unit	
Standard	ICPS-VE-SU-N
with Wi-Fi	ICPS-VE-SU-W
S Series	
2U Publisher Unit	
Standard	ICSS-2U-PU-N
with Wi-Fi	ICSS-2U-PU-W
with TV Capture (ATSC)	ICSS-2U-PU-N-A
with TV Capture (DVB-T)	ICSS-2U-PU-N-D
with HD Video Capture	ICSS-2U-PU-N-H
VESA Mountable Publisher Unit	
Standard	ICSS-VE-PU-N
with Wi-Fi	ICSS-VE-PU-W
2U Subscriber Unit	
Standard	ICSS-2U-SU-N
with Wi-Fi	ICSS-2U-SU-W
with TV Capture (ATSC)	ICSS-2U-SU-N-A
with TV Capture (DVB-T)	ICSS-2U-SU-N-D
with HD Video Capture	ICSS-2U-SU-N-H
VESA Mountable Subscriber Unit	
Standard	ICSS-VE-SU-N
with Wi-Fi	ICSS-VE-SU-W
K Series	
VESA Mountable Standalone Player for Kiosks	
Standard	ICKS-VE-KU-N
with Wi-Fi	ICKS-VE-KU-W
K Plus Series	
VESA Mountable Standalone Player Plus for Interactive Kiosks	
Standard	ICKP-VE-IU-N
with Wi-Fi	ICKP-VE-IU-W
O Series	

Ring Sales or Visit Our Website For Pricing

NOTE: For help choosing the right iCOMPEL model(s) and accessories for your digital signage application, call our FREE, 24/7 Tech Support.

Accessories

iCOMPEL Deployment Manager (iDM)

- For larger signage deployments.
- Enables you to manage your iCOMPEL signage network(s) remotely from any location.
- Brings greater visibility of multiplayer applications.
- Cuts ongoing operation costs and helps to ensure signage uptime.
- Gives the live status for individual or groups of players.
- Provides at-a-glance view of iCOMPEL publish and subscribe operations in a channel.
- Generates player performance reports over user-defined periods.
- Reports on iCOMPEL alarm conditions with time stamps.
- Controllable via a Web browser.
- For details, see blackbox.com.

Item	Code
iCOMPEL Deployment Manager (iDM) for 24 Subscribers	ICOMP-IDM24
for 49 Subscribers	ICOMP-IDM49
for 999 Subscribers	ICOMP-IDM999

NOTE: Upgrade licenses are also available.

Ring Sales or Visit Our Website For Pricing

iCOMPEL Remote Control

- For easy, on-demand control of content and volume at the screen.
- Push a button to activate videos, and even layouts and playlists.
- Also controls TV channel selection on TV Capture versions.
- Great for providing control of content to local users.
- IR sensor on cord plugs into iCOMPEL unit's USB port.



Item	Code
iCOMPEL Remote Control	ICOMP-RC

Ring Sales or Visit Our Website For Pricing

iCOMPEL Rackmount and Wallmount Kits

Item	Code
iCOMPEL Rackmount Ears for (1) 2U S Series/P Series Publisher or Subscriber	ICOMP-RACK
iCOMPEL Wallmount Kit for (1) 2U S Series/P Series Publisher or Subscriber	ICOMP-WALL

iCOMPEL Keys for Stream-In/Stream-Out & Enabling Touch

Item	Code
iCOMPEL Keys	
Stream-In	ICOMP-IN
Stream-Out	ICOMP-OUT
USB HID Touchscreen Feature Key	ICOMP-TOUCH

Ring Sales or Visit Our Website For Pricing

iCOMPEL Wi-Fi Module (Retrofit)

- Adds 802.11a/b/g/n wireless to an existing iCOMPEL unit (factory install only; for details, call Tech Support on 0118 965 6150)

Item	Code
iCOMPEL Wi-Fi Module	ICOMP-WIFI

Ring Sales or Visit Our Website For Pricing

iCOMPEL S-Video Adapter (Replacement)

- S-Video to Composite video adapter for TV Capture models.

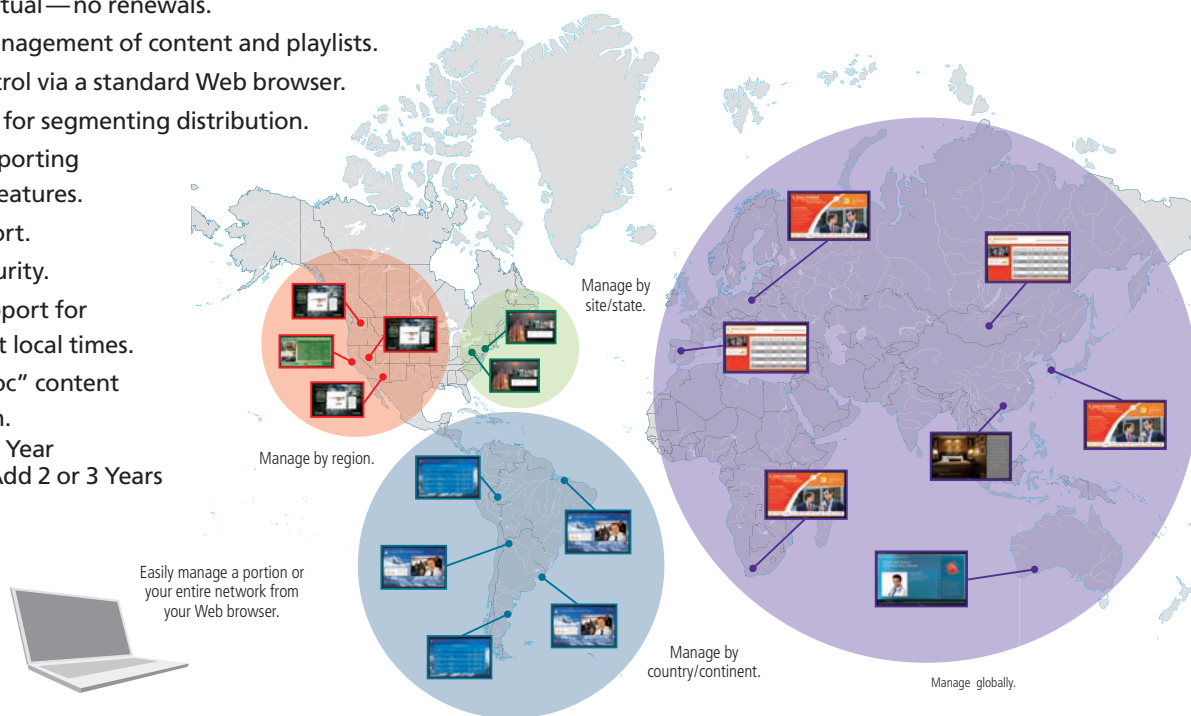
Item	Code
iCOMPEL S-Video Adapter	ICOMP-VID-SV

▶ For complete specifications, go to blackbox.co.uk

iCOMPEL EDS for the Enterprise

Deliver the right message at the right time across your global enterprise

- More features and fewer headaches than similarly priced product bundles for enterprise-wide signage.
- Great for large, geographically diverse networks.
- All licenses are perpetual—no renewals.
- Simplified central management of content and playlists.
- Offers complete control via a standard Web browser.
- Group player control for segmenting distribution.
- Advanced playout reporting and alert reporting features.
- Multilanguage support.
- Enterprise-grade security.
- Global time zone support for playout at the correct local times.
- Supports local “ad hoc” content updates at the screen.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 2 or 3 Years



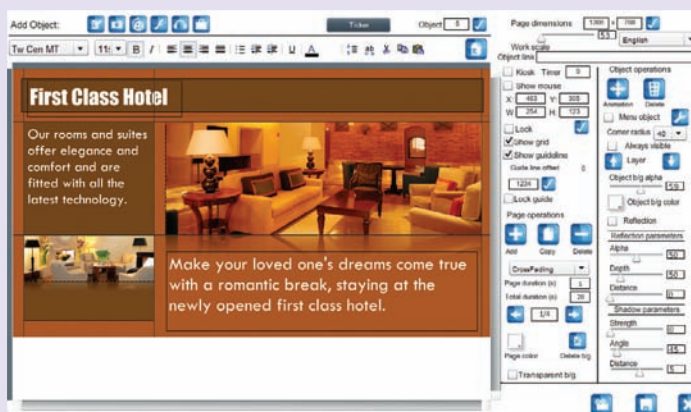
iCOMPEL EDS™ gives you total control and visibility of signage content at the corporate, central administrative office, or government agency level.

With the system, you have an easy way to supply professional-caliber content to large signage networks as well as remotely located networks. Through the platform, you can update content from anywhere you have an Internet connection to change presentations, customize messaging for specific audiences, issue alerts, and more. For each screen, you just need

to add an iCOMPEL EDS Subscriber unit.

The iCOMPEL EDS management software holds all your files and designs. Through the software, you send media over the network to any number of iCOMPEL EDS Subscribers—even on the other side of the world. Scaling your network is simply a matter of adding more iCOMPEL EDS Subscribers to your iCOMPEL EDS configuration.

Easy drag-and-drop design tools and an intuitive composer interface for creating content...



Create using the grid-based palette with sophisticated design tools.

The EDS software gives you an intuitive way to create attention-getting signage, schedule playout, group players, and more.

It features a content-centric interface for creating layouts in a snap. This unique composer tool enables you to add special effects to a layout without working within Flash! Use it, for instance, to:

- Set up effects for page transitions, object animations, image reflection, shadowing, rounded corners on objects, and more.
- Create transparent layers via alpha color background settings.
- Adjust, resize, position, and layer zones with a click and drag.
- Position images exactly by keying in coordinates and image sizes.
- Set background color or images.
- Crop images on the fly without modifying the original file.

After a new playlist of screens is created and saved in the composer tool, the system provides you with a window (shown at right) for easily managing that playlist.

with this easy-to-scale signage solution

Simple to get started and control.

Fully manage your signage presentations using playlists and tools, which provide you with easy, drag-and-drop control from any supported Web browser running a Flash plug-in.

From the Playlist Management screen, you can be building screens in minutes, dropping various media into zones within a new template. Add text, tickers, images, videos, multicast streams, Flash, and audio with ease. It supports 1080p video decoding as well as Flash and HTML media natively.

RSS ticker text is easy to add with iCOMPEL EDS. Tickers can be horizontal, vertical, or block style—great for speedy readers annoyed by ticker crawls.

Layout flexibility.

The software supports full-screen and multizone layouts, and enables you to optimize resolutions for maximum display performance. What's more, screens can be in a kiosk touchscreen application for maximum customer interaction—no extra touch licenses need to be purchased; this support is built into the platform. Incorporating multicast video streams into the layout doesn't require a license either.

Zone, composer, or full-screen playlists or a queue of playlists can be scheduled for playout at specific times. Every zone in the display layout can play content independently from each other. The iCOMPEL EDS Subscriber automatically synchronizes content and starts playout of scheduled playlists.

Optimized for commercial ad networks.

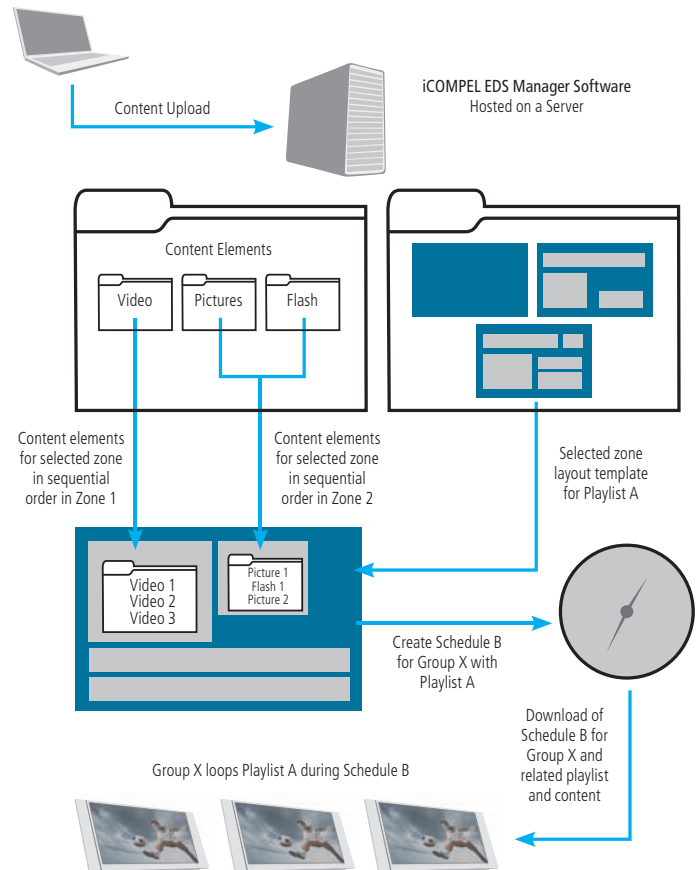
The system supports aggregates from ad networks, so you can subscribe to a network and set up your iCOMPEL EDS system to play ads at certain intervals in your signage. Or, if you like, you can create zones to display ads directly from advertisers.

In addition to player alert reporting for smooth, 24/7 operation, the iCOMPEL EDS supports advanced playout (proof of performance) reporting for customer billing. Plus, through player grouping or meta tagging (license required), you can give media buyers the flexibility to choose where and when their ad is shown. This dynamic function ensures that advertisers get maximum attention at the point of sale.

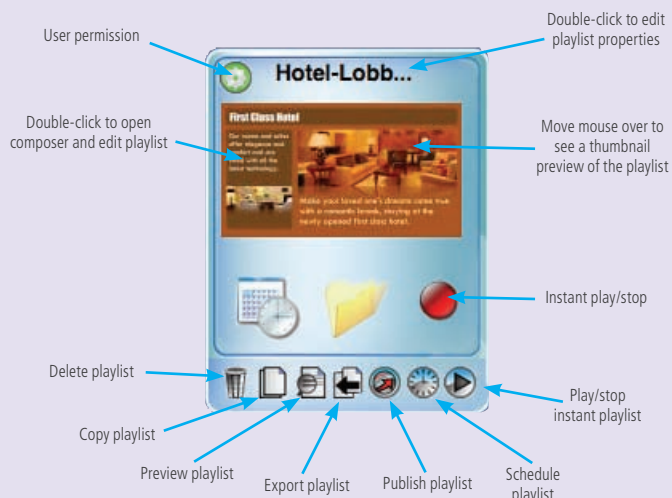
Where it fits in our digital signage line:

- For large signage deployments with screens in many locations.
- Delivered as a virtual machine for easy scalability.
- Ideal for ad networks requiring playout verification on screens.
- For corporate organizations requiring enterprise-grade security settings.
- For administrators needing to segment content distribution by regions.
- All licenses are perpetual—no year-after-year renewals to worry about.

Typical iCOMPEL EDS workflow:



...plus a window for managing playlists



For more on iCOMPEL EDS, turn the page.



iCOMPEL EDS for the Enterprise (Continued)

Key productivity and troubleshooting tools of the iCOMPEL EDS system:

- Drag-and-drop layout, design, and zone manipulation tools.
- Features an interface for monitoring remotely over an IP network.
- Provides a direct link to external info, such as HTML and RSS content.
- Auto-Video/Auto-Picture functions for easier external content updates.
- Enables easy streaming of video channels into playlists and zones.
- Supports quick tiling of images across multiple screens in video walls (additional equipment is required).
- Supports IPTV content streamed from an external streaming device or network video server.
- Kiosk mode ensures your interactive content is always ready for the next viewer.
- Grid and guidelines enable you to quickly position screen content without gaps between zones.
- The system shows how many players are on-line, offline, or in an error state, and can send e-mail error notifications to a system administrator.

The components of the EDS platform:

iCOMPEL EDS Manager Software License (EDS-M)

- VMware® container for easy loading on an existing server.
- Loaded with tools to create pages and playlists for many screens.
- Pushes screen designs to sites globally and supports ad networks.
- For recommended system requirements, including for applications beyond 100 screens, and to inquire about hosting requirements, please call 0118 965 6150
- Also call if you need the software provided on a server that will serve your storage needs now and later.

iCOMPEL EDS Subscriber with Software License (EDS-SS10)

- Can be connected via Internet or Ethernet network to the server hosting the EDS Manager Software, or set it up to communicate via a TCP/IP link over the Web to the software's server.
- Ships as an appliance—connect display, network, and power, then configure and show your sign.
- Slim form factor makes it great for cramped areas behind a display; or VESA mount it behind the screen with the included bracket.
- Windows® based appliance.
- HDMI and VGA ports, audio jacks, USB ports, and a network port.
- 3D capable with additional equipment and content.
- Supports 802.11b/g wireless Wi-Fi communications.

Other options:

We also offer an add-on option for incorporating iCOMPEL WDS wearable digital signage (**facing page**) into your iCOMPEL EDS system. This way, you can use a single interface to manage both standard-size signage and portable wearable signage across your enterprise.

Want all the features of the iCOMPEL EDS in a hardware-based platform for publishing content to fewer than 10 screens? Then see blackbox.co.uk for our iCOMPEL EDS Publisher with Software License (EDS-PP30). With this version, the EDS software comes preloaded in a 2U-high rackmountable appliance. For each screen, you'll just need to add an iCOMPEL EDS Subscriber with Software License (EDS-SS10).

 **iCOMPEL™ EDS**
BLACK BOX DIGITAL SIGNAGE
MANAGER SOFTWARE LICENSE



Mount the subscriber unit on the back of a screen with the included VESA mount, or use it in a tower configuration (stand is included).



Item	Code
First, order your VMware® server application...	
iCOMPEL EDS System Manager Software License	EDS-M
...then, for each screen, order a subscriber:	
iCOMPEL EDS Subscriber with Software License	EDS-SS10
◆ Includes (1) subscriber unit, (1) HDMI cable, (1) Ethernet patch cable, (1) vertical chassis stand, (1) VESA mount, and (1) power supply.	
To add wearable signage to the EDS system, order for each user...	
iCOMPEL WDS Player for EDS or MSM (for details, see the facing page .)	WDS-M

Ring Sales or
Visit Our Website
For Pricing



[Learn more at blackbox.co.uk](http://blackbox.co.uk)

iCOMPEL WDS Wearable Digital Signage

Engage, promote, and get sweet results with video presentations shown on 2.4" LCD screens

- Communicate a value proposition without spoken words.
- Great for trade shows, retail, hospitality, restaurants, and sales calls.
- Players include magnetic clip and lanyard for wearing.
- Create your video and slideshow presentations via a Web portal.
- Order a WDS-M player for every person on your team.
- Players can be managed by the iCOMPEL EDS system (facing page), enabling global content control of screens worn by users anywhere, or via a iCOMPEL EDS MS Manager appliance you keep on-site.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 2 or 3 Years

Think small for big results. Delivering video messaging through screens no bigger than a business card, iCOMPEL™ WDS enables you to reach customers in an unobstructed way.

iCOMPEL WDS gives you the creative freedom to customize a presentation how you like. Compile text, images, Flash, and video into a slideshow using our Composer editor; then add transitions, effects, and durations; and prepare content for a player. Content can range from simple text and JPG images in a slideshow to full-motion video.

The players support an average playback time of 12–15 hours, rechargeable via a USB connection or with the included charger.

The WDS-M version of the player is for use with our iCOMPEL EDS system on the **facing page**. Via the EDS management interface, content for many players worn by associates around the country—or around the world—can be remotely updated for consistent branding and messaging. Even better, much of the same signage content and branding displayed on your



 [Learn more at blackbox.co.uk](http://blackbox.co.uk)

full-size EDS signage can also be displayed on your miniature signs.

Or order our iCOMPEL EDS MS Manager appliance if you want to host content for many players on-site. It's a must-have for retail chains and large companies, as well as organizations with strict data security requirements. It's also a way for you to get WDS signage while using standard digital signage from a company other than Black Box.

Use the iCOMPEL EDS MS Manager for WDS to manage your WDS workflow. The appliance includes content management and configuration software, which you use to create colorful, eye-catching presentations. Just order the appliance plus a WDS-M player for every end user.



Create your WDS presentation with user-friendly tools in the msm.blackbox.com Web portal...



...then upload it to your player(s).



Each player comes with:

- Magnetic clip for fastening to clothing.
- Lanyard holder for both vertical and horizontal use.
- Mini-USB cable for updates and charging.
- MSM Client tool on CD.
- AC charger (100–240 VAC, 5 VDC).



CE Approval — Yes
RoHS — Yes

**Ring Sales or
Visit Our Website
For Pricing**

Item Code

To simply add WDS to the iCOMPEL EDS, order a WDS-M player (below) for each member of your team.

But to store all your WDS content and data on-site, order this appliance...

iCOMPEL EDS MS Manager for WDS
EDS-MSM

...then, to add wearable signage, order for each user...

iCOMPEL WDS Player for EDS or MSM
WDS-M

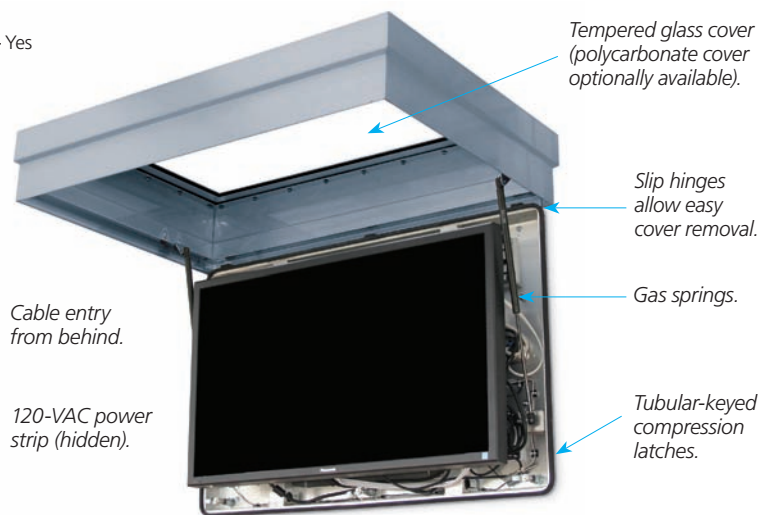
NOTE: Players must be ordered separately. The appliance works with any number of WDS-M players.

Display Enclosures

Protect your expensive displays indoors and out!

- Fully sealed and tamper-resistant, key-locked enclosures for protecting expensive LCD screens in digital signage applications.
- Anti-reflective, 4-mm tempered glass window. Enables clear viewing when the cover is closed.
- Cover is secured with (4) tubular keyed compression latches.
- Durable aluminum body with polyester powder painted finish. Custom colors available to match your organization's color scheme.
- Integrated air movement. Display depth allows air to circulate at the front of the window. AC cooling and fan heating available as options.
- Kits enable various mounting options on walls, posts, and ceilings.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

RoHS — Yes



ENC-42



Item	Code
Display Enclosures, Silver	
30"–32" Displays	ENC-32
40"–42" Displays	ENC-42
46"–47" Displays	ENC-47
50"–52" Displays	ENC-52

You may also need a mounting kit...

Tilt Wallmount Kit	ENC-TILT
Wallmount Arm Kit	ENC-ARM
Post Mount Kit	ENC-POST
Wallmount Kit	ENC-WALL
Ceiling Mount Kit	ENC-CEILING

Ring Sales or
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For Pricing

Great for use in:

- Convention centers
- Airports
- Stadiums and arenas
- Shopping malls
- Transit stations
- Schools
- Hotels and resorts
- Government offices
- Hospitals
- Corporate entrances

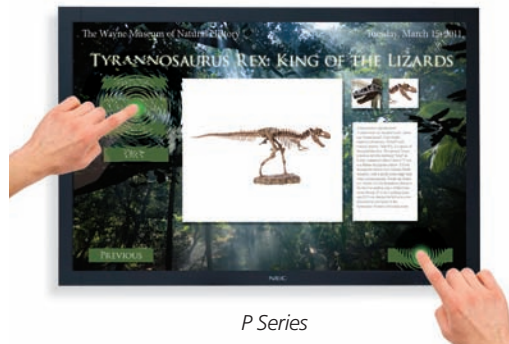
▶ For specifications on all enclosures, see blackbox.co.uk

NEC/3M iCOMPEL Touchscreen LCDs (USB)

Take your iCOMPEL signage to the next level with reliable touch interactivity



V Series



P Series

- LCDs with 3M MicroTouch DST overlays.
- Fast response, 99% accuracy.
- Touch unaffected by surface debris.
- Chemically strengthened glass substrate.
- Adjust to room brightness automatically.
- Low consumption. Energy Star 5.0 rated.
- Manage via RS-232 or Ethernet ports.
- Optimized to work with our iCOMPEL™ platform.
- Windows® 7 certified.
- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Use these to set up dynamic touch displays for wayfinding boards, customer self-service stations, retail PoS/PoP displays, or any place you want a two-way conversation with an audience.

The LCDs use 3M® MicroTouch™ Dispersive Signal Technology (DST) for fast and accurate touch response in busy, heavy-use applications.

The screens recognize touch by interpreting bending waves within the glass substrate. When someone puts a finger on the glass, it creates a bending wave within the substrate, radiating out to the screen corners. Piezoelectric sensors then convert the energy of the wave into electrical signals, which are analyzed by a DSP-based controller board to determine precise touch location.

CE Approval — Yes
RoHS — Yes

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For more specs, plus (non iCOMPEL) models with RS-232 input instead of USB input, see blackbox.co.uk

V Series

- Budget-friendly, standard-bezel screens for areas without high temperatures.
- Boast brightness of 450 cd/m2 (32", 46", and 55" models) or 500 cd/m2 (42" model).
- Contrast ratio of 3000:1 (32", 46", and 55" models) or 1300:1 (42" model).
- Support HD resolutions up to 1366 x 768 (32" model) or 1920 x 1080 (42", 46", and 55" models).
- Ticker feature. Stream text across bottom.
- Digital HDMI and DVI connectors and analog VGA, Composite, and S-Video inputs.
- Stereo audio through 15-W speakers.

P Series

- Industrial-strength, thin-bezel screens with additional thermal protection.
- Support Full HD resolutions up to 1920 x 1080.
- 15-W stereo audio amplifier.
- With 3000:1 (40" and 55")/4000:1 (46") contrast ratios and 8-ms (40" and 55")/16-ms (46") response times.
- Expansion card slot.

Item	Code
NEC V Series/3M iCOMPEL Touchscreen LCDs (USB)	
32"	IC-V3212DST-USB
42"	IC-V4212DST-USB
46"	IC-V4612DST-USB
55"	IC-V551DST-USB
NEC P Series/3M iCOMPEL Touchscreen LCDs (USB)	
40"	IC-P401DST-USB
46"	IC-P461DST-USB
55"	IC-P551DST-USB

Check out these other display and mounting accessories at blackbox.co.uk

Displays and Monitors



See our large displays for digital signage and command and control applications, as well as monitors for workstations:

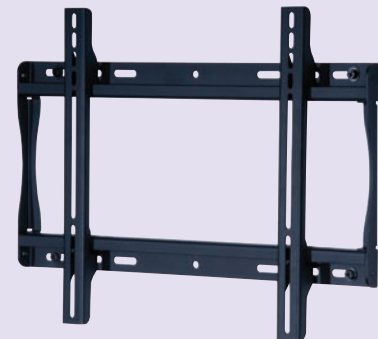
- NEC MultiSync EA Series LCDs
- NEC MultiSync EA Series Widescreen LCDs
- Samsung 50" Plasma Display
- Narrow-Bezel Displays

Wall Display Mounts



For mounting digital signage screens and monitors on walls, we offer a full selection of wall mounts from Peerless and Chief:

- Pull-Out Display Mounts
- Fixed Display Mounts
- Fixed Micro-Adjustable Display Mounts
- Tilt Micro-Adjustable Display Mounts
- Universal Tilt Display Mounts
- Flat Wall Display Mounts
- Tilt Display Mounts for Portrait Orientation
- Articulating Wall Arms for Displays



Buyer's Guide | Digital Extenders

For product details, see the following pages in this section (also be sure to see the Legacy Solutions section).

Standard	Solution/Description	Max. Resolution	Media	Max. Distance	Audio	Serial	Specific Component
HDMI®	XR HDMI and IR Extender HDBaseT® based extender for HD video, audio, and IR control signals.	1080p HD	CATx	328 ft.	•	—	Extender (VX-HDMI-TP-100M)
	XR HDMI, IR, RS-232, and Ethernet Extender Similar to extender above, but with Ethernet passthrough and 3D support.	1080p HD	CATx	328 ft.	•	—	Extender (VX-HDMI-TP-E100M)
	3D HDMI CATx Extender Extends 1080p 24-bit color and 3D; daisychainable when used with VSPX-HDMI-CSRX (below).	1080p HD	CATx	Over CAT6: 24-bit 1080p: 130 ft.; 24-bit 1080i/720p: 200 ft.	•	—	Extender (VX-HDMI-TP-3D40M)
	MediaCento™ HX An economical way to split and extend uncompressed HDMI and single-link, 225-MHz (6.75-Gbps) video; supports 3D; daisychainable when used with VSPX-HDMI-CSRX.	1080p HD	CATx	1080p: 130 ft.; 1080i/720p: 200 ft.; Daisychain up to 1968 ft.	•	—	1 x 4 Tx (VSPX-HDMI1X4-TX)
							Standard Rx (VSPX-HDMI-RX)
							Cascadable Rx (VSPX-HDMI-CSRX)
	MediaCento™ IPX Multicast versions send HD video and audio over an IP network to up to 250 screens or to a video wall; unicast version also available.	1080p HD	TCP/IP LAN	Depends on network and switching devices	•	•	Multicast Tx (VX-HDMI-IP-MTX)
							Multicast Rx (VX-HDMI-IP-MRX)
							Multicast Video Wall Tx (VX-HDMI-IP-VTX)
							Multicast Video Wall Rx (VX-HDMI-IP-VRX)
	HDMI Repeater In-line extender for boosting HDMI signals over HDMI cable.	1080p HD; 1920 x 1200: HDMI	HDMI	From source: 114 ft.	—	•	Unicast Tx (VX-HDMI-IP-UTX)
							Unicast Rx (VX-HDMI-IP-URX)
DVI	3D HDMI Fiber Extender For extending 1080p HD, including 3D and IR control signals, over multimode fibre.	1080p HD	MM fiber	1 mi.	•	—	Repeater (VR-HDMI-50M)
	HD-over-IP Encoder/Decoder An modular unit for sending HDMI or DVI over a LAN using JPEG 2000 compression (3G-SDI card also available).	1080p HD	TCP/IP LAN	Depends on network and switching devices	HDMI only	—	Extender (VX-HDMI-FO)
	DVI-D Extender In-line extender for boosting DVI signals over DVI cable.	1080p HD; 1920 x 1200: DVI	DVI	To display: 50 ft.; From source: 50 ft.	—	—	Base Unit (VX-HDV-IP)
	CATx DVI-D with DDC SL Extender Kit Kit for extending DVI-D and emulated DDC signals over CAT5/CAT5e/CAT6 cable.	1280 x 1024 DVI at 164 ft.; 1600 x 1200 DVI at 100 ft.; 1920 x 1200 DVI at 32.8 ft.	CATx	164 ft.	—	—	DVI-I/HDMI I/O Card (VX-HDV-IP-HDMI)
	XR DVI-D Extender with Audio, RS-232, and HDCP Kit for extending DVI, audio, serial, and HDCP data over one CATx cable.	1080p HD; 1920 x 1200: DVI	CATx	330 ft.	•	•	Extender (AC554A)
	Multi DVI-D Extenders over CATx or Fiber Transmitters and receivers for extending DVI or DVI/stereo audio/duplex serial signals over CATx cable or, with optional fibre module sets, over optical fibre.	1080p HD; 1600 x 1200: DVI	CATx or fibre	600 ft. over CATx; With optional fibre module sets: 1640 ft. over multimode fibre; 6.2 mi. over single-mode fibre	—	—	Extender Kit (ACS2001A-R3)
					—	—	DVI-D Tx (AC1100A)
					•	•	DVI-D Rx (AC1102A)
					•	•	DVI-D/Audio/RS-232 Tx (AC1103A)
					•	•	DVI-D/Audio/RS-232 Rx (AC1104A)
	Mini Extenders for DVI-D and Stereo Audio over Fiber Extender and splitter options for extending HD-quality DVI, including 24-bit color depth, plus stereo audio over a single fiber; daisychainable with 2-port splitter.	1080p HD; 1920 x 1200: DVI	MM or SM fibre	0.9 mi.	•	—	MM Extender (AC1105A)
							SM Extender (AC1106A)
							Extender Kit (AVX-DVI-FO-MINI)
							8-Port Splitter (AVX-DVI-FO-SP8)
							4-Port Splitter (AVX-DVI-FO-SP4)
							2-Port Splitter (AVX-DVI-FO-SPCS)
							Rx Only (AVX-DVI-FO-MINI-RX)

Also see our solutions for extension of digital video plus keyboard, mice, and other workstation peripheral signals:

ServSwitch™ Agility

The ultimate in digital KVM switching and IP-based extension for sharing HD video

- Supports high-quality, full-frame DVI-D video—great for monitoring, healthcare, and military simulation uses.
- Optimized for use in multihead video applications.
- No-loss compression minimizes bandwidth use.
- Configure for multicasting video and audio, point-to-point extension, KVM switching, or point-to-multipoint applications.
- Distance is only limited by your Ethernet network.

Extend HD video to workstation users and provide high-quality HD KVM switching with this flexible system. Support as many users as you want—just keep adding receivers for every user console.

This system can be a KVM switch, sharing portal, or KVM extender, multicasting content to many receivers within an IP network. It's up to you how you configure it. The Agility delivers perfect digital video with no loss, and no-loss compression minimizes bandwidth use.



Users can interact with any of the computers using separate keyboard, mice, and DVI displays. It's ideal for collaborative video applications and control rooms. Even better, with an iPATH™ Agility Controller Unit added, you can remotely configure all transmitters and receivers via a single interface. Define new content channels and more.



[For more information, go to blackbox.co.uk](http://blackbox.co.uk)

DKM FX

A high-performance modular switching and routing system for complete signal distribution



- A video and peripheral matrix switch system that also features HD video extension options.
- For complete distribution of HD video, audio, and data over CATx or single-mode fibre cable.
- No-loss video extension means a high-resolution end product.
- Transmitters can be used in DKM FX switch chassis or as standalone, point-to-point KVM extenders.

Our DKM FX system features the only dual-media switches with the ability to use existing copper and fiber for connectivity between a console/CPU and a switch without a media converter or third-party switching device. Plus the switches are priced about 35 to 45 percent lower than the competition.

DKM FX offers real-time switching of HD video, keyboards, mice, and tablet computers, and enables non-blocking matrix switching of DVI-D, USB-HID, USB 2.0, RS-232, analog audio, or digital audio.

It's ideal for:

- Managers and users of high-end editing and rendering computers.
- Mission-critical command and control rooms with video walls.
- Sharing HD images or collaborating in healthcare applications.
- Easily monitoring critical systems and computers at long distances.

For help ordering, please call 0118 965 6150.



[For more information, go to blackbox.co.uk](http://blackbox.co.uk)

Find your video extender *FAST!*

Our on-line configurator makes it easy

- First, choose your connections: interconnect cable, peripheral support, and extender options.
- Then, choose your video options: video standard, resolution, and the maximum number of receivers.



[Just go to blackbox.co.uk](http://blackbox.co.uk)



XR HDMI and IR Extender

XR: the eXtended Range HDMI solution with enhanced control

- Uses a single CATx run, reducing cable clutter and simplifying setup.
- Sends uncompressed HD video and audio up to 328 feet (100 m).
- Supports IR extension/CEC passthrough for control at a screen.
- Provides 10.2 Gbps of HDMI video bandwidth on all channels.
- Supports 1080p at 60 Hz and 48-bit pixel rates.
- HDCP compliant and Blu-ray ready.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Using a single CAT5e/6 cable, this HDBaseT® based extender makes it easy to send digital 1080p video and audio plus IR control signals up to 328 feet (100 m).

The extender supports 340 MHz 3.4 Gbps of HDMI® video bandwidth per channel and 10.2 Gbps on all channels. It transmits uncompressed full HD digital video/audio plus CEC passthrough and source device control via a built-in IR extender function.

NOTE: Distance depends on the quality of the cable and the type of HDMI source and display.

CE Approval — Yes
RoHS — Yes

CONNECTORS	CABLE	FEATURES
HDMI RJ-45 IR	CAT5, 5e, 6	IR Passthrough



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Item Code
XR HDMI and IR Extender
VX-HDMI-TP-100M

- ◆ Includes (1) transmitter, (1) receiver, (2) power supplies, (1) IR emitter, (1) IR receiver, and wallmounting hardware.

XR HDMI, IR, RS-232, and Ethernet Extender

Transmit Ethernet and serial data along with HDMI and control signals for economical multimedia distribution

- Similar to extender above but also supports Ethernet passthrough.
- Extends uncompressed video, audio, data, and IR control signals up to 328 feet (100 m).
- Line powered; Only one PSU is required.
- HDBaseT based, provides 10.2 Gbps of bandwidth on all channels.
- Supports 1080p/2048 x 1152 as well as 3D and Deep Color resolutions.
- HDCP compliant and Blu-ray ready.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Control AV source equipment at the screen while transmitting Ethernet data to a remote location with this extender.

Over a single CAT5e/6 cable, the transmitter-receiver combo extends full 1080p video and audio plus IR and serial RS-232 control signals up to 328 feet (100 m).

Because it features bidirectional 100BASE-T passthrough, you can distribute both HDMI and Ethernet streaming video to a display over the same non-networked cable link. Each unit has three LAN ports. Use a port on the transmitter, for instance, to plug in an Ethernet switch or hub, and extend data from that switch or hub to a networked device on the other side of the link.

CONNECTORS	CABLE	FEATURES
HDMI RJ-45 Serial IR	CAT5, 5e, 6	IR Passthrough



NOTE: Distance depends on the quality of the cable and the type of HDMI source and display.

CE Approval — Yes
RoHS — Yes

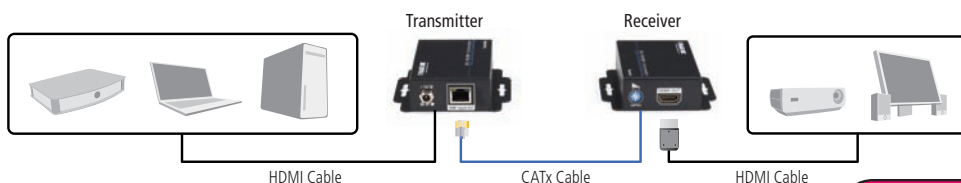
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Item Code
XR HDMI, IR, RS-232, and Ethernet Extender
VX-HDMI-TP-E100M

- ◆ Includes (1) transmitter, (1) receiver, (1) power supply with cord, (1) IR emitter, (1) IR receiver, and (2) sets of footpads.

3D HDMI CATx Extender

Reach HDTV and 3D screens simply and affordably



- A fully transparent HDMI extender designed to support all resolutions.
- Using one CAT6 cable, extends 1080i/720p with 24-bit color up to 200 feet (60 m) and 24-bit Full HD 1080p up to 130 feet (40 m).
- Sends 36-bit 1080p color up to 65 feet (20 m).
- Transmits HDMI with zero compression.
- HDMI Deep Color capable.
- HDCP 1.1 compliant and Blu-ray ready.

- Eight-level equalization control for clarity.
- 7.1-channel surround sound audio support.
- Electrostatic-discharge (ESD) protection.
- Order the VSPX-HDMI-CSRX to daisychain up to 3 receivers.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

NOTE: Maximum distance depends on the quality of the cable and type of source and display.

CONNECTORS	CABLE	FEATURES
HDMI RJ-45	CAT5, 5e, 6	3D Support Daisychainable

CE Approval — Yes
RoHS — Yes

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Item Code
3D HDMI CATx Extender
VX-HDMI-TP-3D40M

- ◆ Includes (1) transmitter, (1) receiver, (2) power supplies, and wallmounting screws.

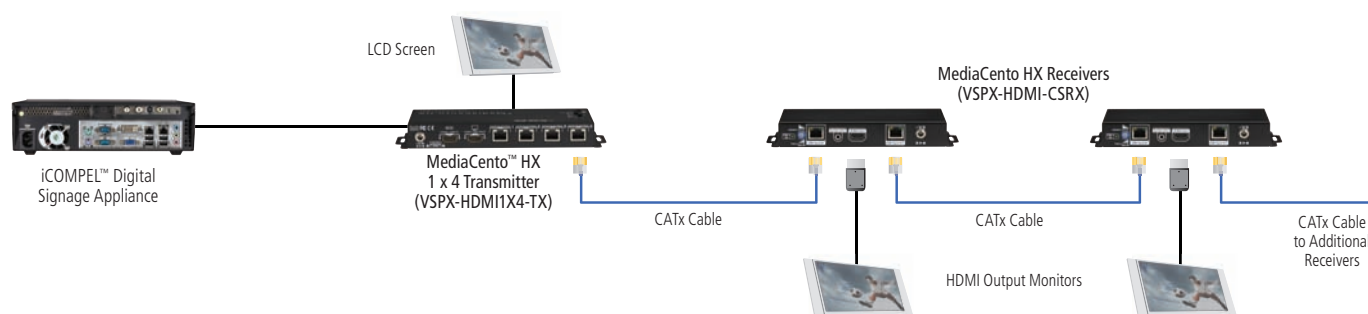
To daisychain (up to 3 receivers total), order:
MediaCento HX Receiver, Cascadable
VSPX-HDMI-CSRX

MediaCento HX

An easy, economical way to split and extend AV signals to digital signage in different areas

- Your solution for reaching multiple HD and 3D screens.
- Uses inexpensive CAT5e/CAT6 cable for uncompressed HDMI® signal extension.
- Supports single-link, 225-MHz (6.75-Gbps) video bandwidth.
- Features a local HDMI output for monitoring or cascading units.
- Extends High-Speed HDMI and Deep Color resolutions.
- Silicon Image® chipset for wide compatibility and performance.
- HDCP compliant and Blu-ray ready.
- Multiple features for EDID support.
- Durable chassis with mounting tabs.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CONNECTORS	CABLE	FEATURES
HDMI RJ-45	CAT5, 5e, 6	3D Support Daisychainable



Split and extend HDMI video and audio from a single source input over a single solid CATx cable run with MediaCento™ HX.

Use it to display video simultaneously on four different screens in lobbies and other areas of your organization. Or daisychain up to 3 VSPX-HDMI-CSRX receivers for each output to reach up to a total of 12 displays.

The system enables the distribution of Full HD (1080p) video as far as 130 feet (40 m) and 720p/1080i video up to 200 feet (60 m) over each link.

And because MediaCento HX supports HDCP communications, you can also extend content from a Blu-ray player or other protected-content source.

Pure digital transmission over CATx.

The transmitter provides unaltered and uncompressed digital transmission. MediaCento

HX supports single-link, 25–225-MHz (6.75-Gbps) bandwidth for sharp, full-motion rendering; synchronized video and audio with no perceivable delay; and Deep Color resolutions for enhanced color depth.

Because MediaCento HX can extend over solid copper cabling already installed in your building, it's easy to put your HD screens in spaces where your target audiences frequent—and you don't have to pull new cables and/or sacrifice video quality in the process. It's perfect for applications that require distance for high-quality video resolutions on HDTV and 3D displays.

Local monitoring and quality control.

To monitor video locally, simply plug an HDMI display into the local HDMI output on the transmitter. Or use that port to cascade to another transmitter for additional HDMI output. (A cascable receiver is available.)

The MediaCento HX system also has controls for maximizing quality and optimizing the signal over extended distances. You simply fine-tune the signal using a digital equalization control dial on the MediaCento HX Receiver.

The MediaCento HX supports high-quality sound, too. As part of the HDMI signal, it transmits 7.1-channel surround sound stereo audio.

NOTE: Distance depends on the characteristics and quality of the cable and the type of HDMI source and display. For full specifications, see blackbox.com.

CE Approval — Yes
RoHS — Yes

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Item Code
MediaCento HX 1 x 4 Transmitter
VSPX-HDMI1X4-TX

Also order a receiver for each remote screen:

MediaCento HX Receiver
Standard
VSPX-HDMI-RX
Cascable
VSPX-HDMI-CSRX

MediaCento HX is great for:

- Broadcast studios.
- Multimedia and graphics post-production.
- Medical imaging video distribution.
- Sharing video with classrooms in schools.
- Retail digital signage deployments in stores and malls.
- Command and control centers.
- Corporate video sharing and training.

MediaCento IPX

Extend HDMI video over an IP network to as many as 250 distant screens—or to video walls!

- A digital solution for the future at an analog price!
- Uses existing standards-based Ethernet technology and TCP/IP protocols.
- Virtually no distance limitations. Can go as far as your network reaches.
- Three versions to choose from: multicast, multicast for video walls, and unicast.
- All versions provide very high image quality with visually lossless compression.
- HDCP compliant and Blu-ray ready, and feature EDID copy function.
- Support serial connections to switch screens on/off.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Standard multicast version.

This IP streaming solution multicasts HDMI video and audio to up to 250 screens on a LAN. You need just one VX-HDMI-IP-MTX transmitter plus a VX-HDMI-IP-MRX receiver for each screen. Because the extender units install directly into an existing LAN, integration is easy.

The extender transmits up to 328 feet (100 m) per link but goes even longer when additional network switches are added to the mix. Its signal is completely digital from end to end, so your digital content is never compromised.



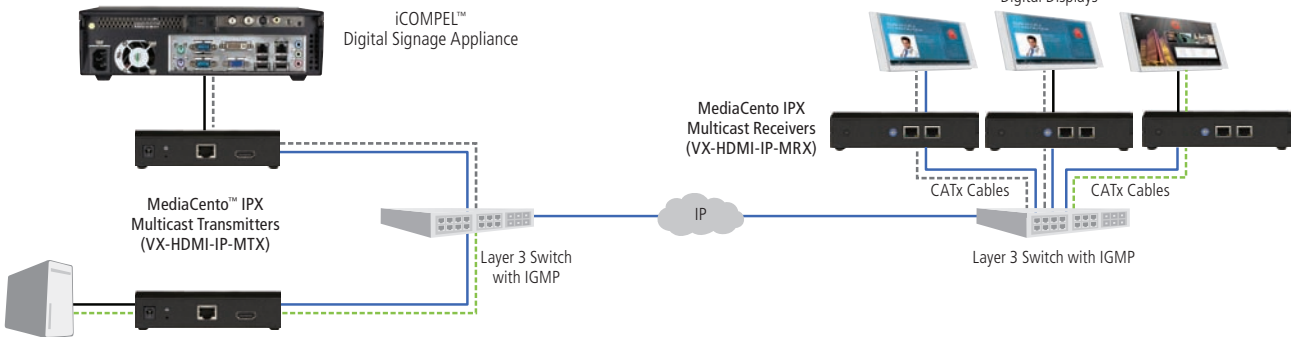
CONNECTORS			CABLE
 HDMI	 RJ-45	 Serial	 Ethernet CAT5, Se, 6



VX-HDMI-IP-VRX

NOTE: Use multicast versions with a Layer 2 or 3 switch with IGMP. For details, call Tech Support at 0118 965 6000.

Typical application for VX-HDMI-IP-MTX/MRX version:



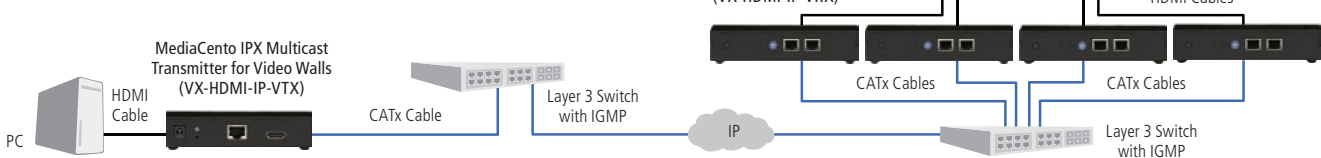
Multicast for video walls version.

This offers all the features of the standard multicast version but also supports the output of a single source video to a matrix of screens, so you can project your HD content on a larger scale.

The extender supports customizable monitor array sizes for any video wall setup, with multiple rows and columns. You need just one transmitter and up to 250 receivers for a customizable wall.

Each receiver scales the correct part of the picture for its wall display. To configure image output, simply access the system's Web-based interface.

Typical application for VX-HDMI-IP-VTX/VRX version:



Unicast version.

If you need to transmit HDMI video and audio over an Ethernet network to just a single display, order this version. It extends up to 328 feet (100 m) but goes even longer with network switches added to the mix. The extender can be used in any existing corporate Gigabit network.

Item	Code
MediaCento IPX Multicast Transmitter	VX-HDMI-IP-MTX
MediaCento IPX Multicast Receiver	VX-HDMI-IP-MRX
MediaCento IPX Multicast for Video Walls Transmitter	VX-HDMI-IP-VTX
MediaCento IPX Multicast for Video Walls Receiver	VX-HDMI-IP-VRX
MediaCento IPX Unicast Transmitter	VX-HDMI-IP-UTX
MediaCento IPX Unicast Receiver	VX-HDMI-IP-URX

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CE Approval — Yes
RoHS — Yes

 For specs and more information, see blackbox.co.uk

HD-over-IP Encoder/Decoder

Extend broadcast-quality 3G-SDI, HDMI, or DVI video over a LAN IP using JPEG 2000 compression technology



VX-HDV-IP and VX-HDV-IP-HDMI



- Captures, compresses, and encodes video for streaming over an IP network.
- Also decodes IP signal back, decompressing it for HD output on remote screen(s).
- Uses JPEG 2000 intraframe compression, ensuring every video frame is transmitted.
- Delivers Full 1080p/60 Hz video over the link without noticeable loss in quality.
- Modular interface. Order DVI-I/HDMI® or 3G-SDI cards for video input/output(s).
- Works equally as well in either point-to-point or point-to-multipoint setups.
- Multiple units can be interconnected via LANs/WANs as well as the Internet.
- Extends up to 328 feet (100 m)—or farther by adding a network switch.
- Also extends USB keyboard/mouse signals over IP to the remote end.
- Supports dual redundant power input and contact closures.
- HDCP compatible. Distribute video from a Blu-ray source.
- EDID function for optimal display data communications.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Transmit high-quality video over a standard IP network for display of HD content on one screen—or multicast signals to multiple displays—with the Black Box® HD-over-IP Encoder/Decoder solution.

Because it uses JPEG 2000 compression, it's extremely efficient when encoding the signal for transmitting over a network. This way, you're assured every single frame is transmitted without any visible loss of quality for maximizing network bandwidth and clear rendering of video.

Plus, it offers very low latency. Delay is less than three frames*, which makes it ideal for streaming live video fast.

The solution uses existing standards-based Ethernet technology and IP protocols to digitally transmit video (as well as multichannel audio if used with the HDMI I/O card) at maximum Ethernet distances of 328 feet (100 m). To go farther, simply add a network switch or enable unlimited distances using the Internet.

An Auto Stream function enables video streaming to start as soon as you connect the encoder/decoders. Connections between units are defined using simple IP addressing via a browser-based management interface, so reconfiguring video streams is easy.

Order two or more base units.

You'll need to order at least two VX-HDV-IP base units with one configured as an encoder and the other as a decoder. When set up to work as an encoder, the base unit compresses the video source signal and transmits it over IP via a Gigabit Ethernet connection. The second unit, configured

as a decoder, decompresses the data, and plays it back in its original form as HD video.

And, as long as you have suitable LAN/WAN bandwidth, the quality of the source video is preserved. Use the two encoder/decoders to unicast video to one screen, or use three or more units to multicast to multiple screens on a LAN.

Flexible modular video interfaces.

Just add 3G-SDI or DVI-I/HDMI I/O Cards for your type of video. You can even mix interfaces, connecting a 3G-SDI source on the encoder side and an HDMI device on the decoder side (each I/O card has video in and out ports). For example, you can plug a 3G-SDI camera into the encoder with the 3G-SDI card and enable playback on a remote HDMI display connected to the HDMI card installed in the decoder unit.

CE Approval — Yes
RoHS — Yes

Item	Code
HD-over-IP Encoder/Decoder Base Unit	VX-HDV-IP
HD-over-IP Encoder/Decoder I/O Card	
for DVI-I/HDMI	VX-HDV-IP-HDMI
◆ Includes (1) HDMI adapter.	
for 3G-SDI	VX-HDV-IP-SDI
Also be sure to order one or more PSUs:	
External PSU for HD-over-IP Encoder/Decoder	VX-HDV-IP-PSU
You may also need:	
19" Rackmount Kit	VX-HDV-IP-RM

* Network delay not included. Speed and video rendering depend on quality of the video source, display(s), and cables, network bandwidth, and other factors.

CONNECTORS	CABLE	PERIPHERALS
DVI-I HDMI SDI RJ-45 USB	CAT5, 5e, 6 Ethernet CAT5, 5e, 6	Keyboard/Mouse

Ideal for:

- Medical image distribution.
- Military HD video sharing.
- TV broadcast studios.
- Other video recording, editing, and archival applications.
- Streaming video for educational and entertainment purposes.
- Distributing video content via an IP network to digital signage.
- Anywhere you require low video latency.

TECH SPECS

Audio — When using a VX-HDV-IP-HDMI or future audio-only I/O card: Channels: (16) in same direction as video; (16) in opposite direction to video;

Audio sampling rate (maximum): 192 kHz;
Audio coding (maximum): 32-bit, uncompressed

Color Depth — 12-bit

Delay — Per device (approximate): 1.5 frames (25 ms at 60 Hz); total delay (approximate): 3 frames (50 ms at 60 Hz) plus network delay

Distance (Maximum) — 328 ft. (100 m); farther distances are possible by using a network switch

Frame Rate — Maximum: 72 Hz; Minimum: 24 Hz

Management — Internal Web server via browser interface

Pixel Clock — Maximum: 150 MHz; Minimum: 25 MHz

Video Resolution — Depending on the encoding:

Maximum: 1920 x 1080p;

Minimum: 640 x 480i

RoHS — Yes

Connectors — Network: (1) RJ-45 (10/100/1000 Mbps);

KVM data: (2) USB 2.0 Type A F;

Video interface: (1) slot for either VX-HDV-IP-SDI or VX-HDV-IP-HDMI I/O card (order separately);

Future audio interface: (1) slot for future audio I/O card;

Power: (1) 6-position terminal block for use with (1) or (2) VX-HDV-IP-PSU units (order separately)

Power — 12 VDC, 13 W from (1) or (2) separately ordered VX-HDV-IP-PSU units attached to (1) 6-position terminal block; with switch contact for monitoring two power inputs (closes to signal any power failure)

Size — 1.6"H x 8.3"W x 8.3"D (4.1 x 21 x 21 cm)

Weight — 2.9 lb. (1.3 kg) without any card(s) installed

NOTE: You will likely need two base units and two I/O cards for a fully functioning link (however, if you already have a software JPEG 2000 encoder solution, just one base unit with a card is needed). For power, be sure to order a PSU for each encoder/decoder or two PSUs for redundant power on a single base unit.

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HDMI Repeater

Boost 1080p HDMI video up to 114 feet (35 m)* with this inexpensive repeater

- Regenerates digital video/audio signals over High-Speed HDMI® cable.
- Supports Full HD video up to 1080p and for 3D display.
- Features 340-MHz/3.4-Gbps bandwidth per channel (10.2 Gbps on all channels).
- Supports 12-bit-per-channel Deep Color depths (36-bit on all channels).
- Eight levels of equalization for optimizing for different cable lengths.
- HDCP passthrough. Use with a Blu-ray or other protected content source.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

Boost HD quality video up to 114 feet (35 m)* with this in-line HDMI Repeater. Placed next to your end device at the end of a longer High-Speed HDMI cable run, the repeater regenerates the HDMI signal (including 3D and Deep Color video) for clear output on a distant HDMI display or projector.

What's more, you can adjust equalization for reliable performance over the exact length of cable on the repeater's input. Simply turn an 8-position EQ DIP switch for your length of HDMI cable. For maximum signal protection, the repeater features a durable metal chassis that helps eliminate EMI interference and digital "noise" that can result in video image "sparkles."

**NOTE: Longer distances up to 164 feet (50 m) are possible with lower resolutions.*



CONNECTORS	CABLES	FEATURES
HDMI	Native	3D Support

Item	Code
HDMI Repeater	VR-HDMI-50M
You may also need:	
PSU for HDMI Repeater	VR-HDMI-PSU

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DVI-D Extender

A simple, plug-and-play way to link a DVI-D display up to 100 feet away



CE Approval — Yes
RoHS — Yes

- Boost your DVI-D signals up to 50 feet (15 m) on each side of the extender.
- Supports HD resolutions of 1080p.
- Eliminates pixelation and sparkle on cable links longer than 15 feet (5 m).
- Supports DVI-D single link or DVI-D dual link.
- HDCP compatible.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

This handy in-line extender enables you to boost DVI-D video up to 50 feet (15 m) on each side.

Use it, for example, to link a media player, PC, or other video source to an HDTV or a plasma or LCD screen. Even better, the extender corrects signal degradation and loss of video in long DVI runs.

Item	Code
DVI-D Extender	AC554A

CONNECTORS	CABLE
DVI-D	Native

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CATx DVI-D with DDC SL Extender Kit

Send DVI-D signals up to 164 feet with this affordable solution—great for imaging applications

- A cost-efficient solution for overcoming DVI cable limits by using CAT5/5e/6 cable instead.
- Clear video resolutions up to 1920 x 1200 at 60 Hz.
- Ideal for broadcast and graphics studios, R&D labs, and medical imaging applications.
- Internal power protection ensures a continuous and steady video signal.
- Supports DDC emulation.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Take single-link DVI-D digital video farther for less by using CAT5/5e/6 cable. Our CATx DVI-D with DDC SL Extender Kit particularly ideal for use in conference rooms, or in office and industrial settings.

This extender supports clear video resolutions of 1920 x 1200 at 60 Hz up to 100 feet (30 m) and 1280 x 1024 at 60 Hz up to 164 feet (50 m).

Plus, it's easy to install in your application. Simply connect the DVI-D output of your PC with the extender's local unit and your display with the remote unit. Next, connect both with the CATx link cable, and turn on the power. Use the PC exactly as if you have a direct connection to your display.



NOTE: Extends digital video only.

CE Approval — Yes
RoHS — Yes

Item	Code
CATx DVI-D with DDC SL Extender Kit	ACS2001A-R3

◆ Includes (1) transmitter, (1) receiver, and

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CONNECTORS	CABLE
DVI-I	CAT 5, 5e, 6

XR DVI-D Extender with Audio, RS-232, and HDCP

Save money and time by using a single CATx cable to extend DVI video, stereo audio, serial RS-232, and HDCP signals

- Use a single CAT5e/6/7 run for extending DVI-D video plus audio.
- Also extends serial RS-232 and HDCP signals to the remote screen.
- Goes much farther than DVI cabling—up to 330 feet (100 m)*.
- Supports resolutions up to 1080p (HDTV) or 1920 x 1200 (VESA).
- Features auto equalization for extended video range.
- Transmits serial RS-232 TXD and RXD control signals.
- HDCP compliant and Blu-ray ready, and supports EDID.
- No software or driver installation required.
- Complies with the DVI 1.0 standard.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Put a digital DVI screen up to 330 feet (100 m)* from a video source and control a display via RS-232 TXD and RXD control signals with our economically priced XR DVI-D Extender with Audio, RS-232, and HDCP.

Extending over a single CAT5e/6/7 cable, the transmitter-receiver combo supports both HDTV resolutions and VESA standards. It enables flexible screen location without compromising video quality.

The extender makes it easy to send digital 1080p-quality video and 2-channel stereo analog audio plus serial RS-232 control signals to a distant screen or projector.

Audio is integrated into the CATx cable extension, so you don't need a separate cable to transmit audio from the source to the screen.

Because the extender supports bidirectional RS-232 control, you can use serial commands from a PC to control RS-232 equipment or turn a remote screen on and off to save energy in your video application.

Plus, the XR DVI-D Extender supports EDID and HDCP bypass, so you can also extend content from a protected-content source. For more on the importance of HDCP compatibility, see the Black Box Explains below.



The extender includes a transmitter and a wallmountable receiver, a powerful yet economically priced combo that enables you to extend 1080p video, audio, serial control, and HDCP signals to a distant screen.

CONNECTORS	CABLE	PERIPHERALS
DVI-D RJ-45 Serial	CAT5e, 6, 7	Speakers

What's included:

- Transmitter
- Receiver
- (2) power supplies with cords
- (2) wallmount brackets with (4) screws

**NOTE: Distance depends on the quality of the cable and the type of DVI source and display.*

CE Approval — Yes
RoHS — Yes

Item	Code
XR DVI-R Extender with Audio, RS-232, and HDCP	AVX-DVI-TP-100M

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Black Box Explains

HDCP

High Bandwidth Digital Protection (HDCP) is an encryption system for digital video, developed in 2003 by Intel®. It applies to all content on Blu-ray discs and HD DVDs, and enables the best possible resolution for display on the screen. This encryption is designed especially for copy protection, to avoid the connection of a recording device within the link for the purpose of copying and/or illegally distributing the content.

Because HDCP is designed for digital video, it's supported only on digital devices with a DVI, HDMI, or DisplayPort interface. If you try to connect a Blu-ray player to an analog display device (such as one supporting VGA or Component video), the HDCP protection prevents an image from displaying or shows only an image with very poor resolution.

The encryption of the content is based on the secure AES-128 standard and uses 128-bit encryption. One part of the key for decoding is stored within the player; the second part is on the medium (disc) itself. The concerned devices use an HDCP key that all can handle. Each HDCP-enabled device supports around 40 keys that are changed with each transmission—sometimes even altered during the transmission. The HDCP encryption actually doesn't alter the actual video signals; it opens or

closes the video channel.

The transmission of HDCP-protected content was originally intended only for the direct connection between two devices, with both devices supporting the HDCP standard to ensure the exchange of the key information. This typically works well in consumer applications. However, in a professional AV environment, it's often necessary to transmit the audio and video signals over long distances or through switching systems. In this case, the corresponding video extenders, switches, and splitters all must support HDCP to take part in the key information exchange. Every active device in the transmission chain must validate the HDCP key to ensure an open video channel. This is why it's important to choose HDCP-compatible AV distribution products.

But also note, even if all devices offer HDCP support, sometimes they're unable to find a shared key. If this happens, the video doesn't display on the output device. This often occurs when connecting an HDMI device to a DVI device. In this case, you can try to "force" the source to the output HDMI video with RGB color encoding or replace the DVI device with an HDMI device.

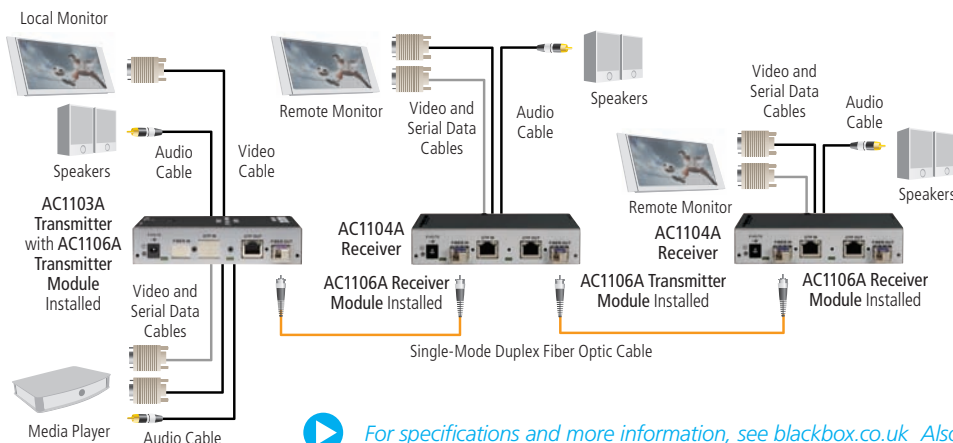
Multi DVI-D Extenders over CATx or Fiber

Extend DVI video plus stereo audio and pollable serial control signals over CATx or Fibre

- As CATx-based extenders, they distribute HD 1080p DVI video up to 600 feet (183 m) over ordinary UTP.
- Add multimode fiber modules for up to 500 meters (1604.4 ft.) or single-mode fiber modules to go as far as 10 kilometers (6.2 mi.).
- Addressable RS-232 models support pollable, full-duplex serial control of displays in a point-to-multipoint or multipoint network.
- Daisychainable. Send signals from a single source to many screens.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

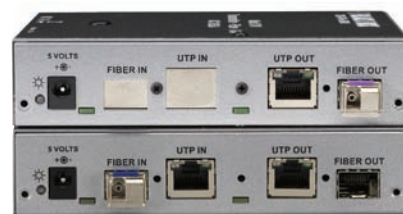
Transmit high-definition DVI over copper or fiber with our Multi DVI-D Extenders. The flexible, daisychainable extenders support all VESA modes to 1600 x 1200, as well as full HDTV formats up to 1080p.

To add stereo audio and serial control, order stereo audio/addressable duplex RS-232 models. They enable you to independently control each display, whether in a point-to-multipoint or multipoint distribution network.



For specifications and more information, see blackbox.co.uk. Also see our site for our full line of fibre cables.

CONNECTORS	CABLE	PERIPHERALS	FEATURES
DVI-D, 4-Pin Phoenix, 5-Pin Phoenix, RJ-45	CAT5,5e,6, Multimode-LC, Single-Mode-LC	Speaker	Daisychainable



Front view (with optional fibre module installed): top: AC1100A; bottom: AC1102A



Rear view:
left: AC1100A;
right: AC1102A

CE Approval — Yes
RoHS — Yes

Item	Code
Multi DVI-D CATx Extenders	
DVI-D Only	
Transmitter	AC1100A
Receiver	AC1102A
DVI-D/Stereo Audio/Addressable Duplex RS-232	
Transmitter	AC1103A
Receiver	AC1104A

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To convert a transmitter/receiver for extending over fiber instead of CATx, order...

Multi DVI-D Fiber Module Sets

Multimode Duplex Transmitter/Receiver Pair	
LC	AC1105A
Single-Mode Simplex Transmitter/Receiver Pair	
LC	AC1106A

3D HDMI Fibre Extender

Extend lossless HDMI greater distances and get support for new 3D screens

- Sends video up to 1.6 kilometers (1 mi.) at 1080i or 0.8 kilometers (0.5 mi.) at 1080p over multimode fibre
- Pure digital transmission with zero compression.
- HDCP compliant and Blu-ray ready.
- IR extending function available (38 kHz).
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

The 3D HDMI Fibre Extender enables you to extend HDMI video and integrated digital audio up to 1.6 kilometers (1 mi.) away from a source with a single duplex fibre cable.

This extender is perfect for applications that require greater distance, high-speed transmission, real-time high video resolution, security, and noise immunity.

Plus, it features an HDMI passthrough port on the transmitter and dual HDMI outputs on the receiver.

HDMI displays can be optimized up to the maximum resolution of Full HD (1920 x 1080)/WUXGA (1920 x 1200)/UXGA (1600 x 1200) with integrated HDMI audio.



CONNECTORS	CABLE	PERIPHERALS	FEATURES
HDMI	Multimode-SC	Speaker	IR Passthrough

CE Approval — Yes
RoHS — Yes

Item	Code
3D HDMI Fiber Extender	
VX-HDMI-FO	

- ◆ Includes (1) local unit, (1) remote unit, (1) IR emitter, (1) IR receiver, (2) power supplies, (1) 2-m (6.5-ft.) SC/SC fiber patch cable,

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Mini Extender for DVI-D and Stereo Audio over Fibre

Extend DVI-D video and stereo audio up to 1.5 kilometers over just a single strand of optical fibre

- Extends Full HD video and 24-bit stereo audio over a single strand of single-mode or multimode fibre with no signal loss.
- Very compact, in-line extenders. No need to make room for an external box at a screen.
- Supports resolutions of 1920 x 1200 (WUXGA) at 60 Hz.
- Offers powerful optical output and reliable sensitivity.
- EDID programmable for use with the latest screens.
- Low power consumption.
- Add optional splitters for multipoint video distribution.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CONNECTORS	CABLE	PERIPHERALS	FEATURES
DVI-D	Audio	Multimode-LC	Single-Mode-LC
		Speaker	Daisychainable



AVX-DVI-FO-MINI

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The extender is great for:

- Reaching signage in public information systems and transit stations with a lot of interference.
- Distributing HD video to monitors in factories or other areas with lots of machinery.
- Transmitting video great distances in large hospitals or across medical health systems.
- Extending video securely in government, military, or defense industry applications.

This economical extender kit enables you to transmit DVI and stereo audio signals longer distances over a single optical fibre strand—without compromising the quality of the original video or audio signal.

Delivering Full HD video resolution to a screen up to 1.5 kilometers (0.9 mi.) away over single-mode fibre or 500 meters (0.3 mi.) away over multimode fiber, the extender kit is ideal for transmitting DVI-D video and CD-quality audio to remote digital signage or monitors.

The extender supports 24-bit true color depth, which makes it great for sharing video in healthcare, education, multimedia production, or engineering applications.

And because it uses optical media for extension, the signal is immune to interference from nearby equipment and is highly secure.

Use it with LC-terminated simplex fibre.

For optimum display communications, the extender reads EDID data from your latest, custom-resolution screens.

Plus, the transmitter and receiver units are super-compact. The receiver can be hidden quite easily behind a screen in a public area, and the transmitter can be installed in-line at a player or other source device.

Need to reach more than one distant screen? Add a 4- or 8-port splitter, or a 2-port daisychainable version, which enables you to not only extend to a receiver but also output video to a second splitter for additional screen connectivity.

CE Approval — Yes
RoHS — Yes

Item Code

Mini Extender for DVI-D and Stereo Audio over Fibre Kit AVX-DVI-FO-MINI

◆ Includes (1) transmitter, (1) receiver, (2) power supplies, and (2) 3.5-mm audio cables.

Spare Power Supply for the Mini Extender Kit AVX-DVI-FO-PS

For distributing to multiple screens, add a... Splitter

8-Port
AVX-DVI-FO-SP8

4-Port
AVX-DVI-FO-SP4

2-Port Daisychainable*
AVX-DVI-FO-SPCS

Then add your required additional receivers... Receiver

AVX-DVI-FO-MINI-RX

To power the Mini Extender over fibre, add... USB Power Cable

AVX-DVI-FO-USBPS

* NOTE: The second port is for daisy chaining to a second splitter only, not for extending to a receiver.

Find your fibre optic cable *FAST!*

Our on-line configurator makes it easy

- First, choose your core diameter and plenum or PVC jacket.
- Then, choose bulk or patch lengths, strand count, simplex or duplex, and your connector.

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Buyer's Guide | Analog Extenders

For product details, see the following pages in this section (also be sure to see the Legacy Solutions section).

Standard	Solution/Description	Max. Resolution	Media	Max. Distance	Audio	Serial	Specific Component
VGA	Wizard Multimedia Extenders LP Affordable extenders for extending and splitting VGA using line-powered receivers.	Maximum on supported input: VGA, 1080p: HD	CATx	500 ft.	•	•	4-Port Tx (AVU4004A)
							1-Port Tx/Rx Kit (AVU4001A)
							Rx (AVU4001A-RX)
	HD View™ VGA Extenders Plug-and-play, modular system for video, audio, and serial extension, including receivers for standard- and long-range distances and reaching up to as many as 256 screens; also available: receivers that plug conveniently into an NEC® LCD expansion slot.	1920 x 1440: VGA, (1080)	CATx	Depends on receiver	•	•	1-Port Tx (AC3000A-R2)
				Depends on receiver	•	•	8-Port Tx (AC3008A-R2)
				Depends on receiver	•	•	16-Port Tx (AC3016A-R2)
				360 ft.	•	•	1-Port Rx, Standard (AC3003A-R2)
				1000 ft.	•	•	1-Port Rx, Long-Range (AC3004A-R2)
				360 ft.	•	•	1-Port NEC Integrated Rx, Standard (AC3003A-NEC)
				1000 ft.	•	•	1-Port NEC Integrated Rx, Long-Range (AC3004A-NEC)
	MediaCento™ VX VGA Extenders Economical extenders for sending VGA, stereo audio, and serial TX/ GND signals over CATx with the option to manage groups of ports on the multiport transmitters; also with cascading video port and daisychainable receiver options for reaching 1000+ displays.	1920 x 1200: VGA; (1080)	CATx	Depends on receiver	•	•	1-Port TX (AVX-VGA-TP-TX)
				Depends on receiver	•	•	4-Port TX (AVX-VGA-TP-TX-4)
				Depends on receiver	•	•	8-Port TX (AVX-VGA-TP-TX-8)
				500 ft.	•	•	Standard RX (AVX-VGA-TP-SRX)
				1000 ft.	•	•	Long-Range RX (AVX-VGA-TP-LRX)
				1000 ft.	•	•	Cascadable Long-Range RX (AVX-VGA-TP-CSRX)
	Economy VGA Extenders Economical extenders available as a 4-port transmitter for reaching multiple areas, as well as for point-to-point extension.	1024 x 768: VGA	CATx	500 ft.	—	—	4-Port Tx (AC555A-4-R2)
				500 ft.	—	—	2-Port Rx (AC555A-REM-R2)
				500 ft.	—	—	Extender Kit (AC555A-R2)
				500 ft.	•	—	Extender Kit with Audio (AC556A-R2)
	Wizard USB Multimedia Extender Transmitter/receiver combo for extending video, audio, and USB 2.0 and 1.1 peripheral signals.	1600 x 1280: VGA	CATx	164 ft.	•	—	Extender Kit (AVU5020A)
	Wizard Multimedia Extenders VGA extenders with audio support for single- and quad-channel transmission; all transmitters work with all receivers; a receiver is available for daisy chaining.	1600 x 1280: VGA	CATx	1000 ft.	•	—	Extender Kit (AVU5010A)
				1000 ft.	•	—	Tx, Single Video/Audio (AVU5001A)
				1000 ft.	•	—	Tx, Quad Video/Audio (AVU5004A)
				1000 ft.	•	—	Rx, Dual Video/Stereo Audio (AVU5011A)
				1000 ft.	•	—	Rx, Dual Video/Stereo Audio/ CATx Daisychain Port with Deskew (AVU5111A-R2)
	Mini CAT5 VGA Extenders CATx-based extender kits, plus multichannel VGA splitter/extenders and VGA receivers, as well as space-saving extender-in-wallplate options.	1920 x 1440: VGA, 1080p: HD	CATx	500 ft.	—	—	Extender Kit (AC504A)
				500 ft.	—	—	Splitter/Tx with Local Port, 2-Channel (AC600A)
				500 ft.	—	—	Splitter/Tx with Local Port, 4-Channel (AC601A)
				500 ft.	—	—	8-Port Splitter (AC654A)
				500 ft.	—	—	Tx with Local Port (AC603A)
				500 ft.	—	—	Tx, Wallplate (AC504A-WP)
				500 ft.	—	—	Rx, Standalone (AC602A)
				500 ft.	—	—	Rx, Wallplate (AC504A-WP-R)

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PLUS see our selection of audio and video baluns

Baluns are compact devices that enable you to connect a balanced line, such as twisted pair, to an unbalanced line, such as coax cable, for economical AV, CCTV, and CATV extensions. We offer versions for extending high-resolution video and digital or analog audio over CATx cable, baluns for transmitting S-Video and audio signals over CAT5, baluns for extending Component or single-signal Composite video equipment, and others.

For more on audio and video baluns, see the end of the Analog Extenders section.



Buyer's Guide | Analog Extenders

For product details, see the following pages in this section (also be sure to see the Legacy Solutions section).

Standard	Solution/Description	Max. Resolution	Media	Max. Distance	Audio	Serial	Specific Component
VGA (Cont.)	Mini CATx VGA Extenders with Video Equalization Adjustment Budget-friendly, line-powered VGA extenders with video equalization and gain control.	1920 x 1200: VGA, 1080p: HD	CATx	500 ft.	—	—	Extender Kit (VX-VGA520-K)
							Standalone Tx Only (VX-VGA520-TA)
							Standalone Rx Only (VX-VGA520-RA)
							Wallplate Tx Only (VX-VGA520-TB)
							Wallplate Rx Only (VX-VGA520-RB)
	VGA/Audio Fibre Extenders For sending VGA and stereo audio over one fibre strand; models available with loopthrough video and audio ports, and for transmitting point to multipoint.	1920 x 1080: VGA, 1080i: HD 1080i (RGBHV only)	SM or MM fiber	SM: 30 km, MM: 750 m	•	—	Tx, VGA/Audio/(1) ST® (AC1021A-XMIT)
							Tx, VGA/Audio Loopthrough/(4) ST (AC1022A)
							Rx, VGA/Audio/(1) ST (AC1021A-REC)
							Rx, 1 x 4 VGA/Audio/(1) ST (AC1023A)
							Extender Kit (AC1020A)
SDI	3G-SDI Fibre Extender Kit for extending 3G-SDI video extra distances over a single strand of secure single-mode fibre.	1080p at 4/30/59.94/60 Hz	SM or MM fiber	10 km	•	—	Extender Kit (VX-SDI-FO-10KM)
S-Video/ Composite/ Component	Universal Video/Stereo Audio Fibre Extender Extender for transmitting various analog video formats and stereo audio over a single fibre.	480p: HD (but also supports 1080i/720p HDTV on BNC)	MM or SM fiber	SM: 60 km	•	—	Tx (AC300A-TX-R2)
					•	—	Rx (AC300A-RX-R2)
Multiple on BNC coax	Fibre Path Fibre extender for transmitting all standard formats, including NTSC, PAL, and SECAM.	—	MM fiber	2.4 km	—	—	Extender Kit (AC444A)
VGA/ Component	MediaCentro™ RF RF coax-based extension of HD video and audio via an HDTV QAM channel.	1920 x 1080: VGA, 1080i: HD	Coax	—	•	—	1080i RF Extender (AVX-VGA-RF)
		1680 x 1050: VGA, 720p: HD	Coax	—	•	—	720p RF Extender (AVX-VGA-RF44)
Component	Mini CAT5 Component Extenders CATx-based extender kits for Component video.	1920 x 1440: VGA, 1080p: HD	CATx	500 ft.	—	—	Extender Kit (AC504A-CP)
	Component Video Extender CATx-based Component video extender.	1080p: HD	CATx	500 ft.	—	—	Extender Kit (AC651A)

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Black Box Explains

Alternatives to analog video cable extension

Extending video long distances often isn't possible or practical using standard VGA or coax cabling. With Composite, Component, and other analog video cabling, frequency losses result in deteriorated video quality. Generally, with these cables, the shorter distance the better.

Extenders that extend analog video over UTP copper or fiber cable solve this problem, enabling you to use backbone or horizontal wiring for long-distance extensions. Depending on the extender model, video input can be VGA, Component, S-Video, Composite, or BNC coax. They're a great alternative to using analog video or coax cables, which often can't be easily pulled through tight spaces and can be more difficult to terminate. What's really nice is, in most buildings, copper or fiber cabling is already installed to service data communications.

Fiber-based extenders provide higher bandwidth and interference-free extensions at greater distances than copper-type CATx extenders.

But there's the matter of cost. CATx extenders that use cabling and connectors cost considerably less than fiber cabling components.

Another thing to consider: Coax- or VGA-cabled extension installations usually require a separate RS-232 or other line for transmitting the control signal for the display—yet another cable to fit into the conduit. CATx cable, however, delivers both the video and control signals through a single transmission medium.

But what if you have long runs of coax installed? An extender like our MediaCentro RF, which uses low-cost RF cabling to broadcast video to remote HDTV screens, may be the answer. Supporting both VGA and Component video source input, the MediaCentro RF encodes and modulates signals for single-channel RF transmission over existing coax wiring. The QAM tuner at the screen enables the reception of the HD MediaCentro RF channel, so no set-top box or other hardware is required.

Wizard Multimedia Extenders LP

Affordable CATx-based ways to send HD VGA video to distant screens using line-powered receivers

- Send maximum resolutions at a maximum distance of 500 feet (150 m).
- Transmit power to receivers—great for digital signage in areas short on outlets.
- Support cloning of EDID display info.
- Video adjustment on receiver for controlling sharpness on the display.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 2 or 3 Years

Simplify Full HD 1080p extension with these CATx-based VGA solutions. Wizard Multimedia LP extenders enable you to reduce the infrastructure required for video-only digital signage extension.

The 4-port transmitter (AVU4004A) extends to four screens at distances up to 500 feet (150 m) using solid-conductor cable, including non-networked CATx runs already installed in your building (shielded, foil twisted-pair [FTP] cable is recommended). Just add a Wizard Multimedia Extender LP Receiver (AVU4001A-RX) for each screen.

Need to reach just a single display? Then order our 1-port transmitter/receiver kit (AVU4001A). It includes an ultra-compact transmitter and receiver.



Even better, all receivers are line powered, so power isn't required at the remote end. With no bulky power transformer to plug in, you can reduce clutter locally at the source and remotely at the display. The Wizard Multimedia Extender LP takes its power directly from a USB interface and extends that power over the link used for video, transmitting low-voltage power via a spare wiring pair to the receiver.

Getting power from the USB interface also makes the Wizard Multimedia Extenders LP great for digital signage or video distribution to screens in areas without abundant power outlets. Plus it's safer (in K-12 school settings, for example).

The 4-port model also has a serial port for switching remote video on and off plus a feed-through VGA port for local monitoring.

Or use the port to cascade to another 4-port transmitter—great in applications where you have more than four displays that you want to reach with your host system. You can cascade another transmitter to support up to eight screens.

NOTE: Maximum distance depends on the quality of the cable and the type of VGA source and display. Low-skew cables are recommended for distances over 164 feet (50 m). For more specifications, see blackbox.co.uk

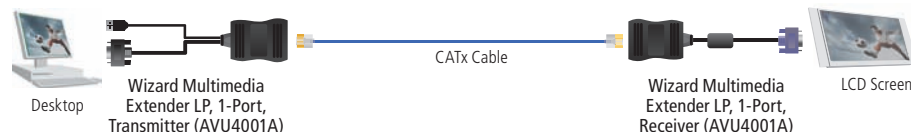
CE Approval — Yes
RoHS — Yes

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Item	Code
Wizard Multimedia Extenders LP 4-Port Transmitter	AVU4004A
1-Port Transmitter/Receiver Kit	AVU4001A

For the AVU4004A, order up to four receivers:
Wizard Multimedia Extender LP Receiver

AVU4001A-RX



HD View Extenders

Flexible, CATx-based solutions for VGA, stereo audio, and control signals extension

- Perfect for reaching LCD screens over dedicated CATx runs.
- System supports signal distribution up to 256 screens.
- Provide HD resolutions up to 1080p (1920 x 1440 at 60 Hz) and stereo audio.
- Choose receivers for 360-foot (109.7-m) or 1000-feet (308.4 m) distances.
- 1-Port Integrated NEC Receivers plug conveniently into an NEC® LCD expansion slot.
- Transmit RS-232 signals for turning screens on/off.
- Plug and play. Extenders install quickly without any unnecessary hardware.
- Now feature surge arrestors to protect against damaging power surges.
- VESA mounting options for discreet installation.
- VESA DDC-2 compliant.
- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 2 or 3 Years



Designed for high-end multimedia applications, HD View is a truly superior system for distributing VGA video and stereo audio signals over CAT5, CAT5e, or CAT6 cable.

The system consists of transmitters and receivers for delivering single or multiple channels of HD video and audio to remote screens.

Out-of-band management frees the network of video multicasting, and because HD View supports RS-232 transmit/receive signaling, you can turn a screen on or off to save energy and maximize screen life. No more walking from screen to screen to power down your displays.

The HD View system also includes a utility that provides you with a full view of your AV topology. Use it to name your devices and ports, and assign screens to groups. You can also use the utility to adjust video quality and RGB skew.

MediaCento VX Extenders

Economically extend VGA video, stereo audio, and serial signals over CATx—and easily manage groups of ports

- Transmit high-quality VGA plus audio and serial signals over standard UTP cable.
- Feature an icon-based GUI for managing groups of extender connections.
- Transmit RS-232 (TX/GND) signals for independently turning on/off of ports.
- Support VGA resolutions of up to 1920 x 1200 (or 1920 x 1080).
- EDID copy function for optimal PC-to-screen performance.
- Long-range models support distances of 1000 feet (300 m).
To go farther, use cascable receivers.
- Cascadable receiver also supports VGA-port cascading to a 4- or 8-port transmitter.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 2 or 3 Years

Use ordinary copper UTP cable to distribute VGA video, stereo audio, and serial signals with the MediaCento™ VX Extender system. The system supports distances of up to 500 feet (150 m) with a standard receiver and up to 1000 feet (300 m) with a long-range receiver, or farther when the distribution chain includes the family's cascable receiver repeaters.

Even better, the MediaCento VX system features a software and audio user interface for managing all VGA connections. No more fiddling with complex commands. Not only can you use the GUI to enable or disable audio/video output by clicking simply on icons, but you can also put extenders into groups for easier control of screen connections—great for managing broadcasting and command and control applications.

For connection to a management computer, the transmitters include an RJ-11 cable and RJ-11/DB9 converter for connecting via RS-232.

The system supports most common VGA resolutions, including WUXGA (1920 x 1200), Full HD (1920 x 1080), and UXGA (1600 x 1200) video even at the longer distances. Unique equalizer, gain, and RGB skew controls on every receiver, even the short-range version, make it easy to fine-tune image quality over longer CATx cable runs.

What's more, a second VGA port and second 3.5-mm audio jack on the transmitters enable you to connect a local monitor and speakers.

To expand to additional screens, order one or more of our cascable long-range receivers. They can be linked via their RJ-45 ports to work as signal repeaters (with up to four units in a chain) and/or be used to cascade via their VGA ports to another transmitter. Depending on the transmitters and receivers ordered, the system supports as many as 32 threads and more than 1000 displays in a VGA distribution network.

CONNECTORS	CABLE	PERIPHERALS	FEATURES
VGA	CAT5, 5e, 6	Serial	Daisychainable

Great for controlling many ports!



AVX-VGA-TP-TX-8: left: front view; right: rear view

CE Approval — Yes
RoHS — Yes

NOTE: For more information, see blackbox.co.uk

Item	Code
MediaCento VX	
Transmitters	
1-Port AVX-VGA-TP-TX	
4-Port AVX-VGA-TP-TX-4	
8-Port AVX-VGA-TP-TX-8	
◆ Include (1) transmitter, (1) power supply, (1) audio cable, (1) RJ-11 control cable, (1) RJ-11-to-DB9 serial converter, (1) ground cable, and (4) rubber feet.	
Receivers	
Standard	
AVX-VGA-TP-SRX	
Long-Range	
AVX-VGA-TP-LRX	
Cascadable Long-Range	
AVX-VGA-TP-CSRX	
◆ Include (1) receiver, (1) power supply, (1) ground cable, and (4) rubber feet.	

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HD View™ BLACK BOX IP BROADCASTING SYSTEM

The system offers easy video tuning for optimizing image clarity at the greatest distances.

Plus HD View supports DDC, which gives you optimal player-to-screen configurations and can be read from the remote port. Using DDC, you can set your digital signage player resolution and refresh rate to the native resolution supported by the connected screen. HD View gets this information from the display, stores it on the transmitter, and emulates it to the player.

In addition, the system offers improved immunity to RF interference and power surges.

For maximum distance, choose long-range receivers, which support distances up to 1000 feet (308.4 m). Standard-range receivers are also available for connections at distances up to 360 feet (109.7 m).

If you have NEC screens with expansion slots and want to reduce cabling, order our Integrated NEC HD View Receivers. These modular receivers offer all the features of our standalone models plus a VGA port to connect to a second display.

AC3003A-NEC



CE Approval — Yes
RoHS — Yes

NOTE: The maximum distance for remote end video is 1000 feet (308.4 m), although not at maximum resolution.

▶ For full specifications see blackbox.co.uk

CONNECTORS	CABLE	PERIPHERALS	FEATURES
VGA	CAT5, 5e, 6	Speaker	Daisychainable

Item	Code
HD View	
Transmitters	
1-Port	AC3000A-R2
8-Port	AC3008A-R2
16-Port	AC3016A-R2
◆ Include (1) transmitter, (1) video cable, (1) serial extender cable, (1) serial download cable, and (1) audio cable.	
Receivers	
1-Port Standalone	
Standard	
	AC3003A-R2
Long-Range	
	AC3004A-R2
1-Port Integrated NEC	
Standard	
	AC3003A-NEC
Long-Range	
	AC3004A-NEC

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Economy VGA Extenders

Simplify and save by using ordinary CATx cable to reach displays and speakers up to 500 feet away



AC555A-R2: left: local unit;
right: remote unit.

- Use ordinary CAT5/5e/6 cable to extend VGA or VGA and audio up to 500 feet (152.4 m).
- Ideal for connecting digital signage and extending video to classrooms.
- Support resolutions up to 1024 x 768.
- Use equalization (gain) control on the remote units to fine-tune video.
- Feature a 2-kV avalanche diode for electrostatic discharge (ESD) protection.
- 4-Port VGA Transmitter extends to four locations and features a local VGA passthrough port.
- For extending to only one area, order the VGA Extender Kit or the VGA Extender Kit with Audio.

- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

Item

Code

Order a transmitter with four UTP ports...

4-Port VGA Transmitter

AC555A-4-R2

...then for each remote site, add a receiver, which connects to two monitors at each

VGA Receiver, 2-Port

AC555A-REM-R2

Need to go just point to point? Order a kit...

VGA Extender Kit

AC555A-R2

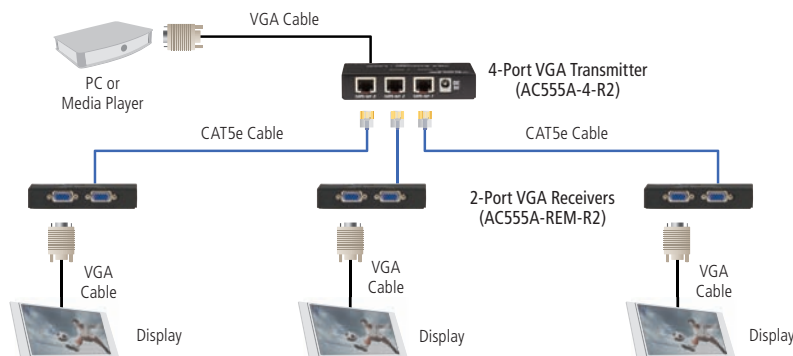
VGA Extender Kit with Audio

AC556A-R2

- ◆ Each kit includes (1) local unit, (1) remote unit, (1) 6-ft. VGA M/F cable, and (2) power supplies. The AC556A-R2 also includes (1) 6-ft. audio cable.

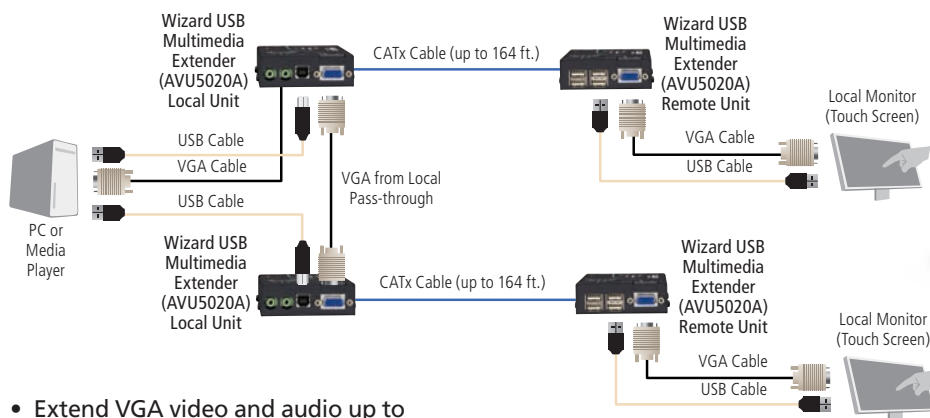
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CONNECTORS	CABLE	PERIPHERALS
VGA	CAT5,5e,6	Speakers



Wizard USB Multimedia Extender

Extend audio and video over inexpensive CATx cable to remote USB touchscreens and other peripherals



- Extend VGA video and audio up to 164 feet (50 meters) over CATx.
- Reach monitors, touchscreens, speakers, and other USB 2.0 and 1.1 devices.
- Features an integrated 4-port USB hub.
- Use two extenders to extend video from computers with dual monitors to touchscreens and interactive kiosks.
- Supports 1920 x 1200 resolutions and fully supports DDC.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

The Wizard USB Multimedia Extender enables you to not only extend video and stereo audio over CATx, but also connect to all sorts of USB 2.0 and 1.1 devices.

Four full-speed USB 2.0 devices can be used simultaneously, disconnected and reconnected at any time without any errors. Plus, video and

audio outputs on the local unit enable local control of remote devices.

What's more, the extender also transmits 44.1-kHz CD-quality stereo audio.

CE Approval — Yes
RoHS — Yes

Item

Code

Wizard USB Multimedia Extender

AVU5020A

- ◆ Includes (1) local unit, (1) remote unit, (1) in-line power supply, (8) rubber feet, (1) VGA cable, (1) 3.5-mm to 3.5-mm audio cable, and (1) USB Type A to Type B cable.

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CONNECTORS	CABLE	PERIPHERALS
VGA, Audio, USB	CAT5,5e,6	USB, Speakers, Touchscreen



Wizard Multimedia Extenders





Transmit VGA video and stereo audio to remote screens and speakers over ordinary CATx cable

- Ideal for digital signage and narrowcasting applications.
- Extend VGA video and stereo signals up to 984.2 feet (300 m).
- All transmitters work with all receivers. To expand your system for additional screens, simply cascade multiple units.
- Use as standalone units or rackmount up to 16 units in the optional 3U chassis.
- Support 1280 x 1024 at distances of 984.2 feet (300 m) and 1600 x 1280 at 656.1 feet (200 m).
- Transmit high-fidelity 16-bit, 44.1-kHz stereo audio.
- Independent sharpness and brightness controls.
- Feature advanced spike suppression for operation in electronically noisy areas.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Take your PC video to distant displays using easy-to-handle CATx cables with our plug-and-play Wizard Multimedia Extenders.

The kit's transmitter (available individually as the AVU5001A) has local ports for local screen and speaker connections or for cascading to other transmitter units. The kit's receiver (available on its own as the AVU5011A) features dual VGA and audio outputs for duplicating input from the transmitter to two remote screens with speakers.

You can also use a quad transmitter model (AVU5004A) to directly feed four receivers. In addition, we offer a receiver with built-in skew compensation and a CATx daisychain port (AVU5111A-R2). It's recommended for CAT5e or higher cable extensions that are longer than 328 feet (100 m). We also recommend it for CAT5e or higher applications in which you need to extend higher resolutions.

CONNECTORS	CABLE	PERIPHERALS
 VGA	 Audio	 CAT5, 5e, 6
		 Speakers



AVU5004A

CE Approval — Yes
RoHS — Yes

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Item	Code
Order a complete extender with a transmitter and receiver included...	
Wizard Multimedia Extender Kit	AVU5010A
◆ Includes (1) single-video/stereo audio transmitter (AVU5001A), (1) receiver with dual video/stereo audio ports (AVU5011A), (2) power supplies with (2) power cords, and (2) sets of rubber feet.	
You can also order individual transmitters and receivers, a quad transmitter, and a receiver with built-in skew compensation...	
Wizard Multimedia Transmitters	
Single Video/Stereo Audio	AVU5001A
Quad Video/Stereo Audio	AVU5004A
Wizard Multimedia Receivers	
with Dual Video/Stereo Audio Ports	AVU5011A
with Dual Video/Stereo Audio Ports, CATx Daisychain Port and Integral Deskew	AVU5111A-R2
◆ Individual transmitters and receivers include a power supply with power cord and (4) rubber feet.	
To rackmount up to 16 individual units, order...	
Wizard Multimedia Extender Rackmount Chassis	AVU5000A
...then order these for every unit you plan to rackmount...	
Wizard Multimedia Extender Universal Plates	AVU5002



For complete specifications, see blackbox.co.uk

Need peripheral support?

See our ServSwitch™ Wizard KVM Extenders for CATx-based VGA extension and remote workstation control

- ServSwitch Wizard USB KVM Extender with Audio sends VGA video, audio, and USB keyboard and mouse signals up to 1000 feet over CATx.
- ServSwitch Wizard USB KVM Extender with Dual-Head VGA and Audio supports 1000-foot distances for workstations with two monitors.
- ServSwitch Wizard USB SRX KVM Extender with Dual-Video, USB, Audio, and RS-232 sends signals for VGA, audio, a USB keyboard and mouse, and two USB peripherals more than 160 feet.



ACU5250A-R2



For more information, visit blackbox.co.uk

Mini CAT5 Extender Kits • Mini CAT5 Splitter/Extenders

Extend digital signage video up to 500 feet over ordinary CAT5 cable

- Use CAT5 cable to send 1600 x 1200 video up to 300 feet (91.4 m) at 85 Hz or 1280 x 1024 video up to 500 feet (152.4 m) at 60 Hz.
- Buffer and boost signals for clear images at the remote end.
- Differential signaling eliminates ground loops and noise.
- For 300-foot extensions, a single power supply is all you need.
- Support a maximum resolution of 1920 x 1440 noninterlaced at 60 Hz and HDTV at 60 Hz to 1080p.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Say good-bye to using difficult-to-terminate VGA cable and pulling Component cabling. The Mini CAT5 Extender Kits enable you to use ordinary CAT5/CAT5e/CAT6 UTP cable to connect a video monitor up to 500 feet (152.4 m) from your PC or video source.

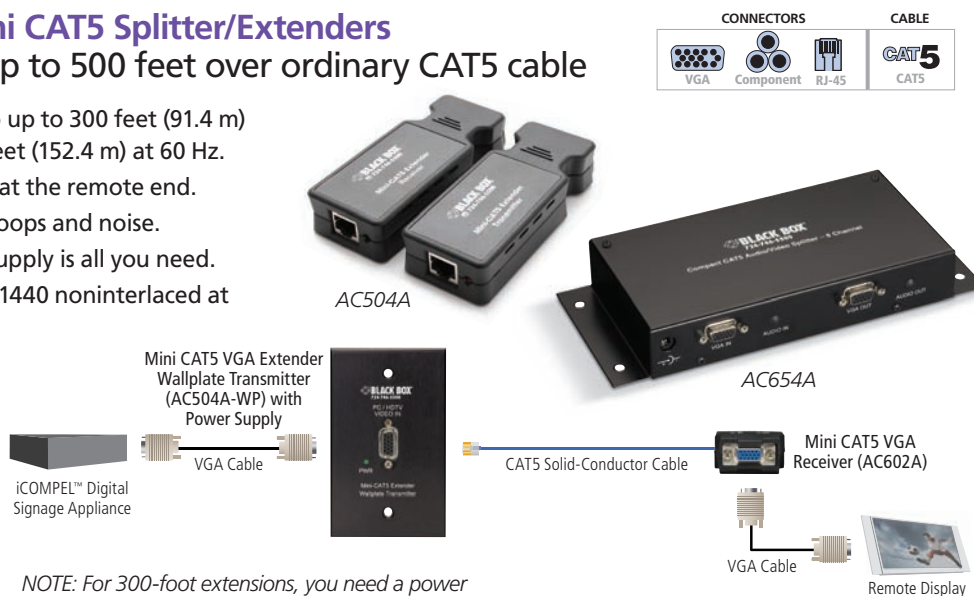
To extend VGA video signals only to two or four remote displays, order a 2- or 4-channel splitter/extender transmitter. Just pair each transmitter with a receiver at each screen. What's more, both splitter/extender transmitters have a second VGA port for a local monitor connection.

For an eight-channel setup, order our 8-Port Component/VGA Video Splitter. It enables you to distribute VGA or Component video to eight displays. Just order a receiver for each display.

You can also order a single-channel Mini CAT5 VGA Extender Transmitter with Local Port. It sends VGA signals up to 500 feet and has a local port for attaching a VGA monitor.

For wallmount applications, order the single-channel wallplate transmitter. Because it's inside a single-gang wallplate, it fits in a standard junction box—great for simplifying your installation.

At the remote location(s), add one or more Mini CAT5 VGA Receivers. The wallplate version is particularly useful in rooms tight on space.



NOTE: For 300-foot extensions, you need a power supply at both ends. To order a separate PSU for a remote unit, contact our FREE Tech Support.

CE Approval — Yes
RoHS — Yes

Item	Code
For an out-of-box kit that connects a single video source to a single receiver, order...	
Mini CAT5 Extender Kit	
VGA	AC504A
Component	AC504A-CP
◆ Each kit includes (1) transmitter, (1) receiver, and (1) power supply. The AC504A also includes (1) VGA male/male cable. The AC504A-CP also includes (2) cables with (1) HD15 male to (3) RCA	
To connect a single VGA video source to multiple receivers, order a transmitter...	
Mini CAT5 VGA Splitter/Extender Transmitter with Local Port	
2-Channel	AC600A
4-Channel	AC601A
◆ Include (1) transmitter, (1) VGA male/male cable, and (1) power supply.	
8-Port Component/VGA Video Splitter	AC654A
Order a standalone transmitter, which also has a port for a local VGA display...	
Mini CAT5 VGA Extender Transmitter with Local Port	AC603A
Or for extension capabilities in a junction box, order the following VGA transmitter...	
Mini CAT5 VGA Extender Wallplate Transmitter	AC504A-WP
...then pair your transmitters with a receiver at the remote VGA video display.	
Mini CAT5 VGA Receiver	
Standalone	AC602A
Wallplate	AC504A-WP-R

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Mini CATx VGA Extenders with Video Equalization Adjustment

Budget-friendly, line-powered extenders for extending VGA up to 500 feet (150 m)

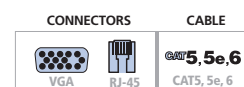
- Extend VGA video up to 480 feet (150 m) over ordinary CAT5/5e/6 cable.
- Very compact, ideal for tight spaces. Save even more space with our wallplate versions.
- Require only a single power supply unit. Can be powered conveniently from either end of the CATx link, locally or remotely.
- Feature video equalization and gain control, so you can fine-tune video at extended distances.
- Support VGA resolutions up to 1920 x 1200, including 1080p quality video.
- Enable EDID copying at the push of a button.



NOTE: Be sure to also order a power supply.

- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 2 or 3 Years

CE Approval — Yes
RoHS — Yes



Item	Code
Mini CATx VGA Extender with Video Adjustment Kit	VX-VGA520-K
◆ Includes (1) VX-VGA520-TA transmitter, (1) VX-VGA520-RA receiver, and (1) power	
You can also order individual	
Transmitter	VX-VGA520-TA
Receiver	VX-VGA520-RA
Power Supply	VX-VGA520-PS
...or order space-saving wallplate	
Transmitter Wallplate	VX-VGA520-TB
Receiver Wallplate	VX-VGA520-RB

For specifications, see blackbox.co.uk

VGA/Stereo-Audio Fibre Extenders

Do more with your fiber! Use just a single fibre strand to transmit video and audio signals to digital signage



- Ideal for digital signage or AV extensions in interference-heavy areas.
- Send high-resolution VGA and stereo audio up to 750 meters (2460.6 ft.) over multimode fiber or up to 30 kilometers (18.6 mi.) over single-mode cable.
- Transmit VGA, SVGA, XGA, and WXGA.
- Support HDTV resolutions of 480p, 720p, and 1080i (RGBHV format only).

- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 2 or 3 Years

CONNECTORS	CABLE	PERIPHERALS
VGA	Multimode-ST Single-Mode-ST	Speaker

CE Approval — Yes
RoHS — Yes

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Item	Code
First order your transmitter...	
VGA/Stereo-Audio Fibre Extender Transmitter with (1) ST® Optical Output, (1) VGA Input, (1) 3.5-mm Audio Jack with (4) ST Optical Outputs, (1) VGA Input with Loop-Through, (1) 3.5-mm Audio Jack with Loop-Through	AC1021A-XMIT AC1022A
...then order your receiver...	
VGA/Stereo-Audio Fibre Extender Receiver with (1) ST Optical Input, (1) VGA Output, (1) 3.5-mm Audio Jack with (1) ST Optical Input, (1) 1 x 4 VGA Output, (1) 3.5-mm Audio Jack	AC1021A-REC AC1023A
Or order an extender kit:	
VGA/Stereo-Audio Fibre Extender Kit (AC1021A-XMIT and AC1021A-REC)	AC1020A

FibrePath

No interference, high bandwidth, low cost.
Fibre secures your video displays!

- Ideal for long-distance information displays, digital signage, and security systems.
- Sends video up to 2.4 kilometers (1.5 mi.).
- Eliminates ground-loop problems.
- Works with all standard video formats, including NTSC, PAL, and SECAM.
- Each unit has a 62.5-µm multimode ST port and BNC coax connectors.

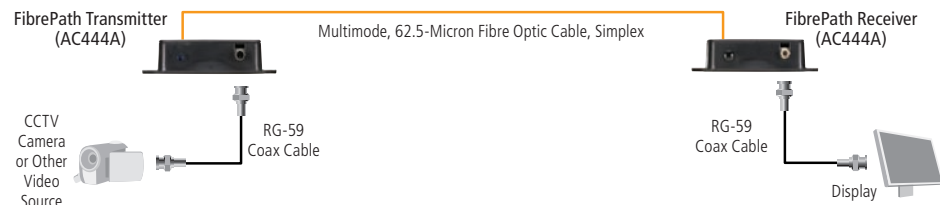


CONNECTORS	CABLE
Composite	Multimode-ST

NOTE: The FibrePath transmitter and receiver must be used in pairs.

CE Approval — Yes
RoHS — Yes

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Item	Code
FibrePath	AC444A
◆ Includes (1) transmitter, (1) receiver, and (2) power supplies.	

If you need a replacement unit, order...

Transmitter	AC445A-TX
Receiver	AC446A-RX

NOTE: These are intended as replacement units and do not include power supplies.

Universal Video/Stereo Audio Fibre Extender

Ensure the quality of video and audio in noisy environments—use fibre

- Send one video and two audio signals over a single 1310-nm, single-mode fibre—as far as 60 kilometers.
- All-digital transmission provides excellent image quality and sound.
- Works with five types of video formats: Composite video, Component video, S-Video, 1080i/720p HDTV, and Progressive Scan DVD.
- Use with multimode or single-mode fibre, and all analog TV video equipment.
- Ideal for professional audio/video applications, POS displays, kiosks, and more.
- Two stereo channels for crystal-clear fidelity.
- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 2 or 3 Years



Top: receiver (AC300A-RX-R2);
bottom: transmitter (AC300A-TX-R2).
The extender has BNC video connectors, screw terminal block connectors for audio, and an ST fibre optic interface.

CE Approval — Yes
RoHS — Yes

CONNECTORS	CABLE
Component Composite S-Video	Multimode-ST® Single-Mode-ST

What's included

- Both the transmitter and receiver include:
- 12-ft. Composite video cable, BNC/BNC
 - 6-ft. S-Video 4-pin mini DIN/(2) BNC cable
 - 10-ft. Component video cable, (3) BNC/(3) RCA plugs
 - 10-ft. stereo audio cable, (4) tin-lead-shielded twisted pairs to (2) RCA plugs
 - BNC to RCA adapter
 - Universal power supply

Item	Code
Universal Video/Stereo Audio Fibre Extender	
Transmitter	AC300A-TX-R2
Receiver	AC300A-RX-R2

3G-SDI Fibre Extender

Extend 3G-SDI video as far as 10 kilometers (6.2 mi.) over a single strand of secure single-mode fibre

- Ideal for linking an SDI camera with SDI display or equipment in another building.
- Extends embedded audio and metadata along with multirate SDI video.
- Works with a range of SD-SDI, HD-SDI, or 3G-SDI (2.97-Gbps) devices.
- Also has video loopout ports for local and remote SDI connections.
- Automatically reclocks SDI signal's data rate to reduce video jitter.
- Features equalization on SDI input and outputs for extended distances.
- Immune to SMPTE RP-198 pathological test patterns.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

TECH SPECS

Cable Equalization — On coax: SD-SDI: 300 m (1000 ft.); HD-SDI: 150 m (500 ft.); 3G-SDI: 90 m (295 ft.)

Fibre Characteristics — Operating wavelength: 1310 nm;
Optical fibre: Single-mode or multimode;
Loss budget: 0–15 dB

Output Impedance — 75 ohms

Protocols — SMPTE 259M (270 Mbps), SMPTE 259M (360 Mbps), SMPTE 292M/HDTV (1.485 Gbps and 1.485/1.001 Gbps), SMPTE 424M/HDTV (2.97 Gbps and 2.97/1.001 Gbps), DVB ASI (270 Mbps)

Video Bandwidth — 2.97 Gbps, 2.97/1.001 Gbps

Video Resolution (Maximum) —
1080p at 24/30/59.94/60 Hz

CE Approval — Yes

RoHS — Yes

Connectors — Transmitter: SDI input: (1) BNC F (75-ohm);
SDI loopout: (1) BNC F (75-ohm);
Fibre interconnect: (1) LC simplex on SFP;
Receiver: SDI output: (1) BNC F (75-ohm);
SDI loopout: (1) BNC F (75-ohm);
Fibre interconnect: (1) LC simplex on SFP

Power — 100–240 VAC, 50–60 Hz, 0.3 A;
Size — Each unit: 1.2"H x 1.6"W x 4.6"D (3 x 4 x 11.6 cm)

Weight — Each unit: 0.3 lb. (0.14 kg)



CONNECTORS	CABLE	PERIPHERALS	FEATURES
SDI	Multimode-LC	Single-Mode-LC	Speaker
			Daisychainable

The transmitter autodetects SDI standard, converting an SMPTE 292M, SMPTE 259M, SMPTE 424M, or DVB-ASI signal to optical signals. Then, at the remote end, the receiver equalizes and reclocks the signal while converting the signal back to the SDI signal.

Item Code
3G-SDI Fibre Extender

VX-SDI-FO-10KM

- ◆ Includes (1) transmitter, (1) receiver, (2) single-mode SFP fibre transceivers, (2) power supplies, and (4) mounting screws.

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MediaCento RF Distribution System

Use low-cost coax to send HD video and audio to multiple HDTV screens across a campus



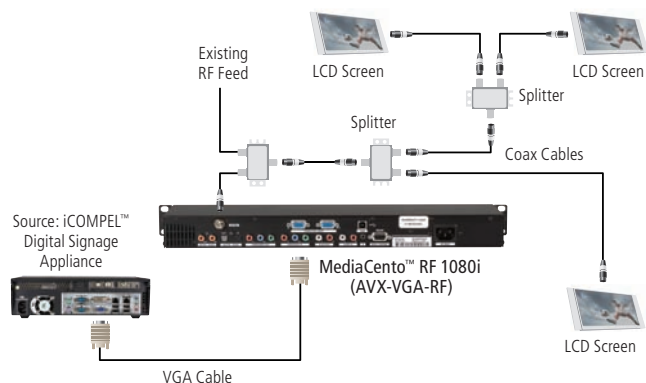
Top: AVX-VGA-RF44; bottom: AVX-VGA-RF

- An economical alternative to installing a digital signage player at every display when the messaging is the same on every display.
- As a combination MPEG 2 encoder/frequency-agile QAM modulator, encodes and modulates video, creating an HDTV channel for low-cost coax distribution.
- Makes it simple to send video to every on-premise HDTV screen.
- Works with any VGA or Component video source (computers, set-top boxes, digital signage players, etc.).
- To view video remotely, just tune in the channel using the HDTV's QAM tuner.
- Also transmits audio.

- No set-top boxes required. No limit to the number of HDTVs that can receive signals from one unit.
- Combine the channel with 133 other HDTV channels—use with an existing TV distribution system.
- **STANDARD WARRANTY** — AVX-VGA-RF: 3 Years; AVX-VGA-RF44: 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

For specifications go to blackbox.com.

CONNECTORS	CABLE
Component	VGA
TOSLINK®	Digital Audio
Analog Audio	Analog Audio
	Coax



Why install new cabling for AV distribution when you can use existing coax runs instead? With MediaCento RF, you can convert Component or VGA source video into an HDTV cable channel, extending that channel over standard coax RF wiring in a building. It's a cost-effective solution for hospitals, schools, hotels, or anywhere with lots of existing coax wiring.

Item Code

MediaCento RF

1080i AVX-VGA-RF

720p AVX-VGA-RF44

To add closed captioning in your broadcast...

Closed Caption Device

AVX-RFCC

To clear a channel on your system, order...

Channel 125 Filter

AVX-RFNF125

Channel 135 Filter

AVX-RFNF135

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Component Video Extender Kit

Extend Component video up to 1000 feet over UTP cable

- Use inexpensive CAT5e/CAT6 cable to extend standard or HDTV Component video signals.
- Supports 1080i at up to 500 feet (152.4 m) and 1080p at up to 300 feet (91.4 m).
- Protects against interference, prevents distortion and video hum, and matches UTP cable impedance to prevent ghosting.
- Wide-bandwidth (450-MHz) differential amplifiers ensure sharp video at remote screen.
- For multiple screens, use the AC654A splitter with individual receivers (call to order).



Left: transmitter;
right: receiver

- **STANDARD WARRANTY** — Both 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CONNECTORS	CABLE
 Component RJ-45	 CAT5,5e,6

CE Approval — Yes
RoHS — Yes

Ring Sales or
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For Pricing

Item	Code
Component Video Extender Kit	AC651A

◆ Includes (1) transmitter, (1) receiver, (1) power supply, and (2) Component video cables.

For larger applications, order...
8-Port Component/VGA Video Splitter
AC654A

CCTV Passive Hub • CCTV Power-Through Baluns

Extend CCTV video and remote power over inexpensive CATx cable instead of coax



IC562A

- All support NTSC, PAL, and SECAM formats.
- The 1U **CCTV Passive Hub** sends video, PTZ control, and power over ordinary CATx cabling.
- The hub extends video at up to 2500 feet (762 m), PTZ control up to 4000 feet (1.2 km), and power up to 350 feet (106.6 m).
- It has RJ-45 ports on the front and coax jacks on the rear. Set ports individually for power-through or pass-through. It works with the power-through baluns.
- **CCTV Power-Through Baluns** send color video up to 2200 feet (670.5 m) over CATx.

▶ For full features, specs, and warranty go to blackbox.co.uk.

CONNECTORS	CABLE
 BNC Screw Terminal RJ-45	 CAT5,5e,6

- **STANDARD WARRANTY** — Lifetime

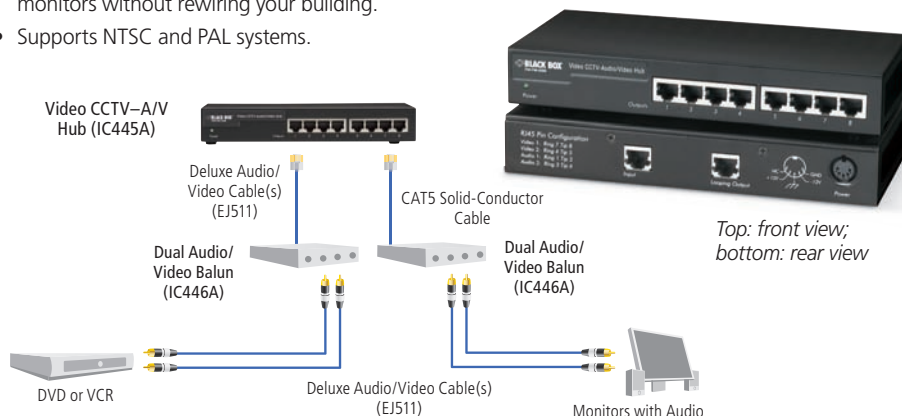
CE Approval — Yes
RoHS — Yes, except for IC561A

Item	Code
CCTV Passive Hub with (16) BNC Coax Connectors	IC562A
CCTV Power-Through Baluns with RJ-45 Connectors	IC560A
with Screw Terminals	IC561A

Video CCTV-A/V Hub

Run multiple combinations of audio/video signals over ordinary, affordable CATx cabling

- Use CATx to run two Composite video signals or one S-Video and two audio signals up to 2500 feet (762 m) to eight sites. Pair each run with a compatible balun at the remote ends.
- Broadcast different programs on multiple monitors without rewiring your building.
- Supports NTSC and PAL systems.
- Integrates seamlessly with many of our baluns (at right). For details on the compatible baluns, see the next pages.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



Top: front view;
bottom: rear view

CONNECTORS	CABLE
 RJ-45	 CAT5,5e,6

Ring Sales or
Visit Our Website
For Pricing

Item	Code
First order the hub...	
Video CCTV-A/V Hub	IC445A

...Then pair each RJ-45 port with a remote balun (a balun is required for each link)...

CCTV Baluns	
BNC/RJ-45	IC440A
BNC/Screw Terminal	IC444A
RCA/RJ-45	IC444A-RCA
Component/Composite Video Balun	IC462A
Dual Audio/Video Balun	IC446A
Video/Stereo Audio Balun	IC441A-R2
S-Video Balun	IC447A
S-Video with Dual Audio Balun	IC449A

▶ For full features, specifications, and warranty go to blackbox.co.uk

Save money by running audio/video signals over

Mount square baluns for

Video PTZ Balun

Transmit CCTV and PTZ signals as far as 2200 feet



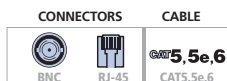
- Integrate CCTV security devices into your cabling system.
- Includes a 10" (2.5-cm) BNC-to-BNC coax cable.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Item Code

Video PTZ Balun
IC450A-R2

NOTE: Must be used in pairs.

CE Approval — Yes



CCTV Baluns

Run Composite video over easy-to-handle CATx



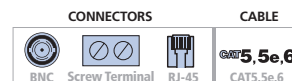
- Converts baseband signal from 75-ohm coax cable to CATx.
- **STANDARD WARRANTY** — Lifetime

NOTE: Must be used in pairs.

CE Approval — Yes

Item Code

CCTV Baluns
BNC/RJ-45
IC440A
BNC/Screw Terminal
IC444A
RCA/RJ-45
IC444A-RCA



CATV Balun

Integrate CATV equipment into your CAT5 cabling system



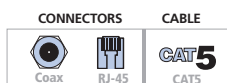
- Works with CATV, VHF, and FM systems.
- F-type connector.
- **STANDARD WARRANTY** — Lifetime

Item Code

CATV Balun
IC448A-R2

NOTE: Must be used in pairs.

CE Approval — Yes



Quad Video Balun

Send four Composite video signals up to 2200 feet

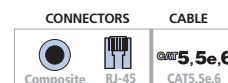


- Eliminates four Composite runs.
- RCA inputs.
- **STANDARD WARRANTY** — Lifetime

NOTE: Must be used in pairs.

Item Code

Quad Video Balun
IC564A



Component Video/Digital Audio Balun

Connect HDTV devices over long distances



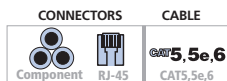
- Extends 480i/p video 1000 feet (304.8 m); 720p/1080i/p video 500 feet (152.4 m).
- **STANDARD WARRANTY** — Lifetime

NOTE: Must be used in pairs.

Item Code

Component Video/Digital Audio Balun
IC566A

CE Approval — Yes



VGA Baluns

Send VGA signals over STP cable



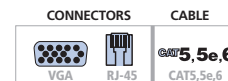
AC641A

- Uses 4-pair shielded twisted pair.
- Support resolutions of 640 x 480 at up to 450 feet (137.1 m).
- **STANDARD WARRANTY** — Lifetime

CE Approval — Yes
RoHS — Yes

Item Code

VGA Baluns
(Order both a source and a display balun.)
Source Male
AC640A
Display Female
AC641A
Display Male
AC642A



16-Slot Rackmount Balun Chassis • Balun Mounts

Organize your square audio/video baluns with this rackmount chassis and these wall/surface mounts



16-Slot Rackmount Balun Chassis (AC701A) shown with Blank Fillers, 4-Pack (AC701) and four VGA Source Male Baluns (AC640A, above) installed.

16-Slot Rackmount Balun Chassis

- Holds 16 square baluns in a 2U 19" rack.
- For high-end cable management.
- Connects baluns for DVDs and other head-end equipment with CATx cabling in a wiring closet.
- Snap-in design for secure balun installation.
- Baluns install front- or rear-facing.
- Blank fillers available for unfilled slots.



CAT5 instead of expensive coax cable

security and organization

Component/Composite Video Balun

Extend high-end video

- Use CAT5 to extend Component video 1000 feet (304.8 m). Three pairs are required for a YPbPr connection.
- Or use one pair to send Composite video 2200 feet (670.5 m).
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years



CE Approval — Yes



Item	Code
Component/Composite Video Balun	IC462A

Audio Baluns (Analog & Digital)

Extend audio over CAT5 cable



CE Approval — Yes

NOTE: Must be used in pairs.

- Analog: up to 5000 feet (1524 m). For stereo, order two per side.
- Digital: up to 600 feet (182.8 m).
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Item	Code
Audio Baluns	
Analog	IC460A
Digital	IC461A

RGB Video Balun

Transmit RGB video up to 500 feet over CATx cable



CE Approval — Yes

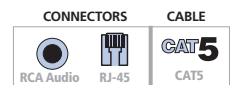
NOTE: Must be used in pairs.

- Convert Component signals from three coax cables for extension.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Item	Code
RGB Video Balun	IC442A-R3
◆ Includes (3) coax jumper cables.	

Quad Audio Balun

Send four analog audio signals as far as 5000 feet



- A great alternative to coax.
- Connectors: (4) RCA, (1) RJ-45.
- **STANDARD WARRANTY** — Lifetime

CE Approval — Yes
RoHS — Yes

NOTE: Must be used in pairs.

Item	Code
Quad Audio Balun	IC565A-R2

S-Video Balun

S-Video Balun with Dual Audio Balun

Send S-Video and audio signals up to 1000 feet



CE Approval — Yes

NOTE: Must be used in pairs.

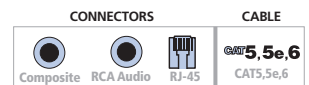
- Use with DVD players, set-top boxes, and other S-Video devices.
- IC449A has two audio channels.
- Work with the IC445A hub on the previous two pages.
- **STANDARD WARRANTY** — Lifetime

Item	Code
S-Video Balun	IC447A
S-Video Balun with Dual Audio Balun	IC449A

Dual Audio/Video Balun

Video/Stereo Audio Balun

Extend Composite video and audio signals over 2000 feet



- Dual Audio/Video Balun extends up to 2000 feet (609.6 m).
- Video/Stereo Audio Balun goes up to 2200 feet (670.6 m).
- Eliminate four coax cables.
- **STANDARD WARRANTY** — IC446A: Lifetime; IC441A-R2: 2 Years
- **EXTENDED WARRANTY** — IC441A-R2: Add 1 or 3 Years

CE Approval — Yes

NOTE: Must be used in pairs.

Item	Code
Dual Audio/Video Balun	IC446A
Video/Stereo Audio Balun	IC441A-R2

Wallmount Balun Mount (AC702A) shown holding the RGB Video Balun (IC442A-R3, above).



Wallmount Balun Mount

- Supports most square baluns.
- Spring clip holds balun securely mounted forward or rear-facing.
- Attaches to gang boxes.

Surface Balun Mount

- One-piece design.
- Mount to walls or desks.
- **STANDARD WARRANTY** — Lifetime

TECH SPECS

CE Approval — Yes
RoHS — Yes
Size — AC701A: 3.5"H x 19"W x 3"D (8.9 x 48.3 x 7.6 cm);
AC702A: 4"H x 1.3"W x 2.7"D (10.2 x 3.3 x 6.9 cm);
AC703A: 2.4"H x 3.4"W x 1.1"D (6.1 x 8.6 x 2.8 cm)
Weight — AC701A: 1.9 lb. (0.9 kg);
AC702A: 0.2 lb. (0.1 kg);
AC703A: 0.1 lb. (<0.1 kg)

Item	Code
16-Slot Rackmount Balun Chassis	AC701A
For unused chassis slots, order...	
Blank Fillers, 4-Pack	AC701
Balun Mounts	
Wallmount	AC702A
Surface	AC703A

Buyer's Guide | Splitters

For product details, see the following pages in this section.

Video Standard	Solution Description	Maximum Resolution	Media	Specific Component
HDMI	HDMI Splitters with Audio Split HDMI® video and audio signals for 2, 4, or 8 outputs; feature 3.5-mm analog audio jacks for separate speaker connections.	1080p: HD, 1920 x 1200: DVI	HDMI	1 x 2 Splitter with Audio (AVSP-HDMI1X2)
				1 x 4 Splitter with Audio (AVSP-HDMI1X4)
				1 x 8 Splitter with Audio (AVSP-HDMI1X8)
DVI	Dual-Link DVI-D Splitters Split ultra-high-resolution dual-link DVI video for output on four screens.	1080p: HD, 2560 x 1600: DVI	DVI	1 x 2 Splitter (VSP-DLDVI1X2)
				1 x 4 Splitter (VSP-DLDVI1X4)
	DVI Splitters with Audio and HDCP Use to split DVI signal for 2 or 4 outputs and reproduce HDCP-protected content on connected screens.	1080p: HD, 1920 x 1200: DVI	DVI	1 x 2 Splitter (AVSP-DVI1X2)
				1 x 4 Splitter (AVSP-DVI1X4)
SDI	3G-SDI Splitter, 1 x 4 Distribute 3G/HD/SD-SDI source video to four distant SDI screens or devices.	3G-SDI, HD-SDI, SD-SDI	Coax	1 x 8 Splitter (AVSP-DVI1X8)
VGA	VGA Video Splitters Use to split VGA input for 2, 4, or 8 outputs.	2048 x 1536: VGA	VGA	1 x 4 Splitter (VSP-SDI1X4)
				2-Channel Splitter (AC1056A-2)
				4-Channel Splitter (AC1056A-4)
	2-/4-Port Audio/Video Splitters Splitters featuring (1) VGA-audio in and (2) or (4) VGA-audio out.	2048 x 1536: VGA	VGA	8-Channel Splitter (AC1056A-8)
				2-Port Splitter (AC650A-2)
	4-Port XGA Video Splitter Splits XGA signal for four screens.	1600 x 1200: VGA	VGA	4-Port Splitter (AC650A-4)
				4-Port Splitter (AC090A)

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For other video splitters and broadcasters, turn to the Legacy Solutions section



Also see these CATx-based signal-distribution solutions in our extenders section:

MediaCento™ HX 1 x 4 Transmitter

Reach multiple HD screens simply and affordably with this HDMI solution

- Splits and extends AV signals to four digital signage screens.
- Uses inexpensive CAT5e/CAT6 cable for uncompressed HDMI® signal extension.
- Supports single-link 225-MHz (6.75-Gbps) video bandwidth.
- Transmits 1080p video as far as 130 feet (40 m).
- Has local HDMI output for monitoring or cascading units.



Not only does it split the signal, but it's also a distribution amplifier that regenerates the HDMI signal for boosting video over a single solid CATx cable run.

Plus, the device supports single-link 225-MHz (6.75-Gbps) bandwidth for sharp full-motion rendering, synchronized video and audio with no perceivable delay, as well as Deep Color resolutions for enhanced color depth and refresh rates.



For more information, see the Digital Video Extenders section.

Wizard Multimedia Extender LP 4-Port Transmitter

Broadcast HD VGA video to four distant screens using line-powered receivers

- Sends maximum resolutions at a maximum distance of 500 feet (152.4 m).
- Transmits power to receivers. Great for areas short on outlets and reducing cords at screens.
- Features feedthrough port for local monitoring or cascading units.

This 4-port transmitter extends VGA video as far as 500 feet (152.4 m) using solid-conductor CATx cable.

Used with separately sold receivers, the transmitter broadcasts Full HD 1080p video to four screens in four locations over copper already installed in your building.



Even better, the receivers are line powered from the transmitter, so power isn't required at the remote end. This feature makes the extender ideal for rooms where you're short on outlets, as well as reducing the number of cords around or behind screens.



For more information, see the Digital Video Extenders section.

HDMI Splitters with Audio

Affordable splitters for duplicating digital video from one source on as many as eight HDMI displays

- Split an HDMI® signal between two, four, or eight outputs simultaneously.
- Provide accurate video reproduction without distortion and attenuation.
- Distribute audio via the HDMI ports or separate 3.5-mm analog audio jacks.
- Blu-ray ready for HD display.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Split and distribute HDMI video plus audio from a set-top box, PC, or other HDMI source device to eight digital screens. These devices split a source between two, four, or eight outputs simultaneously without signal loss.



AVSP-HDMI1X8

Simply connect HDMI cables, power up the system, and you're ready to duplicate video. You can also cascade multiple units to broadcast to additional screens.

The splitters support HDMI display resolutions of up to UXGA (1600 x 1200), WUXGA (1920 x 1200), or Full HD 1080p (1920 x 1080). High bandwidth enables you to transmit information at high speeds.

Plus, they're fully HDCP compliant and support EDID display information.

Because they feature separate 3.5-mm jacks for distributing audio on each channel, the splitters are ideal for applications where, instead of the HDMI audio capabilities of the connected displays, you want to use existing high-power speakers and high-fidelity audio receiver equipment for audio output.

Separate 3.5-mm jacks for audio!

TECH SPECS

Resolution (Maximum) — PC: WUXGA (1920 x 1200); HDTV: 1080p (1920 x 1080)

CE Approval — Yes

RoHS — Yes

Connectors — Input: (1) HDMI F; (1) 3.5-mm audio; Output: (2), (4), or (8) HDMI F; (2), (4), or (8) 3.5-mm audio

Power — Input: 100–240 VAC, 50–60 Hz, autosensing; Output: 9–12 VDC;

Consumption: AVSP-HDMI1X2: 2.8 W;

AVSP-HDMI1X4: 4.1 W;

AVSP-HDMI1X8: 10.2 W

Size — AVSP-HDMI1X2:

0.8"H x 7.1"W x 3.4"D (2 x 17.8 x 8.6 cm);

AVSP-HDMI1X4:

1.75"H (1U) x 8.7"W x 5.4"D (4.5 x 22.1 x 13.7 cm);

AVSP-HDMI1X8:

1.75"H (1U) x 17.3"W x 7.1"D (4.5 x 44 x 18 cm)

Item Code

HDMI Splitters with Audio

1 x 2 AVSP-HDMI1X2

1 x 4 AVSP-HDMI1X4

1 x 8 AVSP-HDMI1X8

♦ 1 x 8 model also includes (1) rackmount kit.

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To connect to DVI devices, order...

HDMI Male to DVI Female Adapter

FA790

HDMI Male to DVI Male Adapter

FA795-R2

NOTE: The quality of output depends largely on quality of source, HDMI cable, and display.

Dual-Link DVI-D Splitters

Easily split dual-link DVI without any loss in video quality

- Reliably and accurately duplicate dual-link DVI-D video.
- Ideal for digital signage, classroom and conference presentations, studios, or any video broadcasting application.
- Supports resolutions up to 2560 x 1600.
- Feature electrostatic discharge (ESD) protection.
- Wallmountable, durable metal chassis.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years



VSP-DLVD11X2

Use our affordable Dual-Link DVI-D Splitters to transmit dual-link video (ultra high-resolution video up to 2560 x 1600) from a DVI source to four screen locations without any loss in quality.

These distribution amplifiers enable you to output DVI 1.1-compliant source video on two or four DVI screens simultaneously for video sharing.



VSP-DLVD11X4

The splitters make it easy to show a video presentation on multiple screens. They're also great for digital signage applications.

The splitters offer simple, plug-and-play installation. Just plug in DVI cables into dual-link DVI ports and connect your screens. A DIP switch enables EDID learning.

TECH SPECS

DVI Standard — DVI 1.1

Input DDC Signal — 5 volts (peak-to-peak, TTL)

Input TMDS Signal — 1.2 volts (peak-to-peak)

Video Bandwidth — 300 MHz

CE Approval — Yes

RoHS — Yes

Connectors — Video input: (1) DVI-I F;

Video output: (2) or (4) DVI-I F;

Serial: (1) DB9 F (RS-232 for firmware updates)

Power — Input: 100–240 VAC, 50–60 Hz, 0.6 A;

Output: 5 VDC, 4 A;

Consumption (maximum): 20 watts

Size — VSP-DLVD11X2: 1"H x 8.2"W x 2.2"D

(2.5 x 20.8 x 5.6 cm);

VSP-DLVD11X4: 1.8"H x 8.6"W x 3.9"D

(4.6 x 21.8 x 10 cm)

Weight — VSP-DLVD11X2: 0.9 lb. (0.4 kg);

VSP-DLVD11X4: 1.6 lb. (0.7 kg)

Item Code

Dual-Link DVI-D Splitters

1 x 2 VSP-DLVD11X2

1 x 4 VSP-DLVD11X4

♦ Both include (1) splitter, (1) power supply, and (2) mounting screws.

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DVI-D Splitters with Audio and HDCP

Broadcast HD video—even HDCP content—to two, four, or eight displays

- Enable you to put digital video content before more customers and users.
- The 2- and 4-channel splitters feature 350-MHz bandwidth; the 8-channel model provides 300-MHz bandwidth.
- Fully HDCP compliant and work with EDID-capable screens.
- Cascadable for additional screen ports.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

These affordably priced single-link DVI splitters enable you to accurately duplicate one HD video and stereo input for output to multiple screens.

They provide reliable output without signal distortion and attenuation, supporting resolutions of up to Full HD (1920 x 1080) as well as WUXGA (1920 x 1200) and UXGA (1600 x 1200).

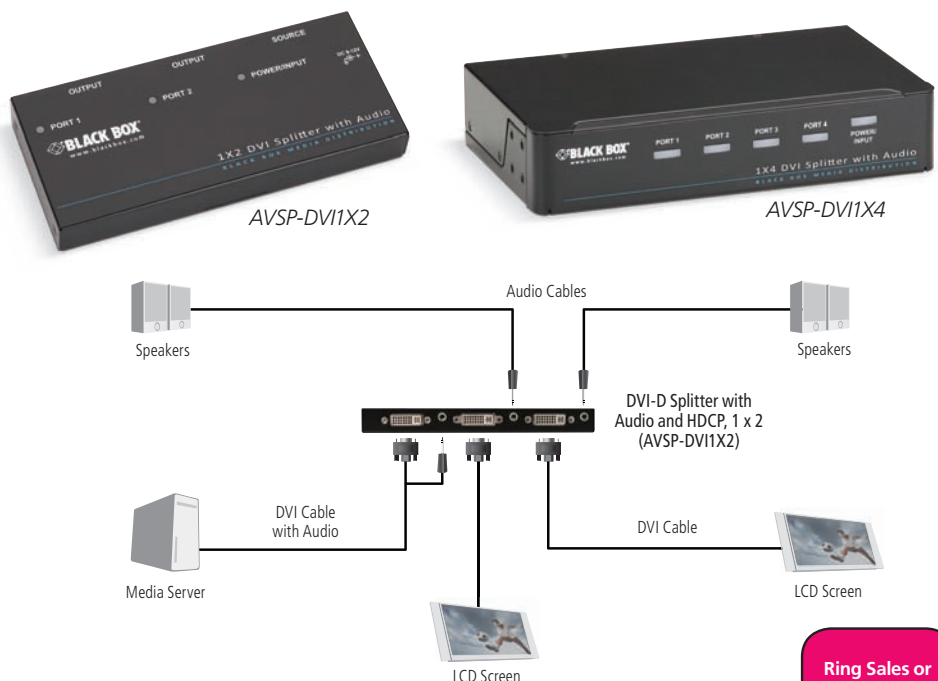
Because the splitters are fully HDCP compliant, you can distribute content from a Blu-ray player or other HDCP-protected source.

Plus, they can be used with the newest EDID-capable screens. They obtain EDID data from the connected displays so your source's video card is optimized for displaying video on those screens.

To broadcast to additional screens from the same player or other source, order multiple splitters and connect them together via cascaded ports.

And to connect to HDMI® devices, just order an adapter for each DVI port on your splitter.

NOTE: Maximum resolutions depend on the type of AV equipment and the quality and the length of the DVI cables.



DVI-D Splitters with Audio and HDCP are ideal for:

- Retail and corporate digital signage.
- Broadcast rooms and studios.
- Process control and engineering.
- Healthcare and R&D imaging.
- Classrooms and training rooms.
- Government command centers.
- Conference rooms and boardrooms.
- Temporary setups at trade shows.

CE Approval — Yes
RoHS — Yes

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For Pricing

Item	Code
DVI-D Splitters with Audio and HDCP	
1 x 2	AVSP-DV11X2
1 x 4	AVSP-DV11X4
1 x 8	AVSP-DV11X8
♦ All include (1) splitter and (1) set of rubber feet. The 1 x 4 and 1 x 8 models also include (2) rackmounting ears.	
You may also need...	
Digital Visual Interface (DVI) Cable, DVI-D Male, Straight Hood/DVI-D Male, Straight Hood 6-ft. (1.8-m)	
	EVNDVI02-0006

3G-SDI Splitter, 1 x 4

Easily split and distribute 3G-SDI source video in HD to four distant SDI screens

- Supports 3G-SDI as well as HD- and SD-SDI video distribution.
- Outputs video on four separately buffered and reclocked BNC ports.
- Uses cable equalization and signal retiming for longer connections—up to 190 feet (60 m) for 3G-SDI video.
- Passes audio and all ancillary data of the signal through.
- Durable metal enclosure.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Split, reclock, and amplify SDI source video for four SDI outputs on 1080p HD or SD monitors using the 3G-SDI Splitter, 1 x 4.

It's particularly ideal for TV studio, post-production, digital cinema, or AV applications where you need to split and extend from a camera or other device equipped with 3G/HD/SD-SDI outputs to four SDI-compliant displays or video processors.

The splitter automatically detects the type of SD signal on source input and uses equalization to transmit SD-SDI signals as far as 1000 feet (300 m) over four BNC coax runs to four displays.



For HD-SDI video, the splitter goes up to 500 feet (150 m) and for 3G-SDI video, up to 190 feet (60 m).

CE Approval — Yes
RoHS — Yes

Ring Sales or
Visit Our Website
For Pricing

Item	Code
3G-SDI Splitter	
1 x 4	VSP-SDI1X4

VGA Video Splitters

Send eye-catching presentations over 200 feet with these cascadable splitters

- Simple-to-connect devices for broadcasting PC video on two, four, or eight monitors up to 210 feet (64 m) away.
- The 2- and 4-channel splitters feature 350-MHz bandwidth; the 8-channel model provides 300-MHz bandwidth.
- Cascadable for additional monitor ports.
- Include VGA cables for input and output connections.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Great for splitting video to trade show or retail displays, or for displaying video on multiple monitors in classrooms, our VGA Video Splitters offer quick setup and easy use.

Just connect the VGA cables and power up your system, and you're ready to start duplicating VGA images for multiple monitors. You can even cascade units to increase VGA outputs and connect more monitors.

The splitters support 1920 x 1440 at 70 Hz resolution, and provide clear, sharp images whether you're using VGA, Super VGA (SVGA), or multisync monitors.

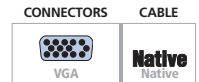
CE Approval — Yes
RoHS — Yes

What's included:

- VGA Video Splitter
- (1) 5-ft. (1.5-m) HD15 male/HD15 male VGA input cable
- (1), (3), or (7) 10-ft. (3-m) HD15 male/HD15 female VGA output cable(s), depending on the model ordered.



Top left: AC1056A-4 rear view;
top right: AC1056A-2 rear view;
bottom: AC1056A-8 rear view



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For Pricing

Item	Code
VGA Video Splitters	
2-Channel	AC1056A-2
4-Channel	AC1056A-4
8-Channel	AC1056A-8

2-/4-Port Audio/Video Splitters

Transmit video and audio signals from one PC to two or four VGA monitors



Top: AC650A-4 front view;
bottom: AC650A-4 rear view

- Support monitor resolutions up to 2048 x 1536 at 60 Hz and pixel resolutions up to 400 MHz.
- Place monitors up to 213.2 feet (65 m) away.
- Compatible with a broad range of interfaces, including VGA, SVGA, XGA, UXGA, QXGA, and multisync.
- Easy-to-use front-panel select switches.
- Support the VESA DDC, DDC2, and DDC2B standards.
- Cascadable up to two levels.
- Equipped with 3.5-mm audio jacks.

- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes

Item	Code
Audio/Video Splitters	
2-Port	AC650A-2
4-Port	AC650A-4



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Visit Our Website
For Pricing

4-Port XGA Video Splitter

Send one XGA or VGA signal to four monitors

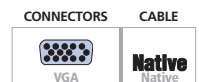


- All four channels support a standard distance of 100 to 200 feet (30.4 to 60.9 m), depending on the resolution.
- Or configure two of the channels to support distances of up to 600 feet (182.8 m) without a video booster.
- 250-MHz bandwidth supports resolutions up to 1600 x 1200 (UXGA).
- Shielded enclosure protects against EMI/RFI interference.

- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

Item	Code
4-Port XGA Video Splitter	AC090A



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For more VGA splitters, turn to the
Legacy Solutions section.

Buyer's Guide | Switches

For product details, see the following pages (also see the Legacy Solutions section).

Standard	Description	Max. Resolution	Audio	DDC	HDCP	Specific Component
DisplayPort	DisplayPort Switches 2 x 1 and 4 x 1 units for switching multiple DisplayPort sources for display on one DisplayPort screen.	1080p: HDTV; 1920 x 1200: Display Port	—	•	•	2 x 1 Switch (AVSW-DP2X1)
			•	•	•	2 x 1 Switch with Serial and Audio (AVSW-DP2X1A)
			•	•	•	4 x 1 Switch with Serial and Audio (AVSW-DP4X1A)
HDMI®	HDMI Switches 2 x 1 and 4 x 1 units for switching multiple HDMI sources for display on one HDMI screen.	1080p: HDTV; 1920 x 1200: DVI-D	—	•	•	2 x 1 Switch (AVSW-HDMI2X1)
			—	•	•	4 x 1 Switch (AVSW-HDMI4X1)
	HDMI Switches with Audio & Serial Control Same switches as above but with 3.5-mm audio and RS-232 management ports.	1080p: HDTV; 1920 x 1200: DVI-D	•	•	•	2 x 1 Switch with Audio and Serial (AVSW-HDMI2X1A)
			•	•	•	4 x 1 Switch with Audio and Serial (AVSW-HDMI4X1A)
	HDMI Matrix Switches 2 x 2, 2 x 4, 4 x 2, and units for switching multiple HDMI sources to multiple HDMI screens.	1080p: HDTV; 1920 x 1200: DVI-D	•	—	•	2 x 2 Switch (AVSW-HDMI2X2)
			•	—	•	2 x 4 Switch (AVSW-HDMI2X4)
	4 x 4 and 8 x 8 HDMI Switches Switching for easily routing HDMI video from multiple sources to multiple displays.	1080p: HDTV; 1920 x 1200: DVI-D	•	—	•	4 x 2 Switch (AVSW-HDMI4X2)
			•	—	•	4 x 4 Switch (VSW-HDMI4X4-B)
DVI	DVI-D Switches 3 x 1, 4 x 1, and 8 x 1 units for switching between multiple DVI-D sources.	1080p: HDTV; 1920 x 1200: DVI-D	—	—	•	3 x 1 Switch (VSW-DVI3X1)
			—	—	•	4 x 1 Switch (VSW-DVI4X1)
			—	—	•	8 x 1 Switch (VSW-DVI8X1)
	DVI Switches with Audio and Serial 2- and 4-channel units for switching DVI/audio sources to multiple screens via an RS-232 serial connection.	1080p: HDTV; 1920 x 1200: DVI-D	•	•	•	2-Channel Switch (AC1032A-2A)
			•	•	•	4-Channel Switch (AC1032A-4A)
	8 x 8 DVI-D Matrix Switch with Audio 8 x 8 unit for switching multiple AV sources to multiple AV screens.	1080p: HDTV; 1920 x 1200: DVI-D	•	—	•	8 x 8 Switch with Audio (AVSW-DVI8X8-B)
	2 x 4 DVI-D Matrix Switch with Audio For switching multiple DVI/audio sources to multiple screens.	1080p: HDTV; 1920 x 1200: DVI-D	•	—	—	2 x 4 Switch with Audio (AC1124A)
VGA	4 x 2 DVI-D Matrix Switch with Audio & Serial For switching multiple DVI/audio sources to multiple screens; RS-232 support.	1080p: HDTV; 1920 x 1200: DVI-D	•	—	—	4 x 2 Switch with Audio and Serial (AC1125A)
	VGA Switches with Serial and 3.5-mm Audio 4 x 1 and 8 x 1 units for switching VGA and audio to a single screen via an RS-232 link.	1600 x 1200: VGA	•	—	—	4 x 1 Switch (AVSW-VGA4X1A)
			•	—	—	8 x 1 Switch (AVSW-VGA8X1A)
	Compact VGA Switches 2 x 1 and 4 x 1 units for switching VGA sources to a screen.	1600 x 1200: VGA	—	—	—	2 x 1 Switch (AC505A)
	Compact VGA Switches with Audio 2 x 1 and 4 x 1 units for switching VGA and audio sources to a screen.	1600 x 1200: VGA	—	—	—	4 x 1 Switch (AC506A)
			•	—	—	2 x 1 Switch with Audio (AC505A-2A-R2)
	VGA Matrix Switches 2 x 4 and 2 x 8 units for switching two VGA sources to multiple screens.	1920 x 1440: VGA	—	•	—	4 x 1 Switch with Audio (AC506A-4A)
			—	•	—	2 x 4 Switch (AC508A)
	ServSwitch™ Brand Matrix Video Switch 4 x 4 unit for switching VGA sources to multiple screens.	1600 x 1200: VGA	—	•	—	2 x 8 Switch (AC509A)
			—	•	—	4 x 4 Switch (ACL0404A)
	VGA Matrix Switches + Serial 8 x 8 and 16 x 16 units for routing VGA to multiple screens.	1080p: TV; 1900 x 1200: VGA	—	—	—	8 x 8 Switch with Serial (AC1120A)
			—	—	—	16 x 16 Switch with Serial (AC1122A)
	VGA Matrix Switches (VGA) with Audio + IP and Serial Control 8 x 8 and 16 x 16 units for routing VGA and audio to multiple screens, plus IP control.	1080p: TV; 1900 x 1200: VGA	•	—	—	8 x 8 Switch with Audio + IP and Serial (AC1121A)
			•	—	—	16 x 16 Switch with Audio + IP and Serial (AC1123A)
	VGA Matrix Switches (RJ-45) with Audio + Serial Control 8 x 8 and 16 x 16 units for VGA video/audio switching on RJ-45 ports with built-in extender transmitters.	1080p: TV; 1900 x 1200: VGA	•	—	—	8 x 8 Switch with Audio + Serial, RJ-45 Outputs (AC1120A-RJ45)
			•	—	—	16 x 16 Switch with Audio + Serial, RJ-45 Outputs (AC1122A-RJ45)
	8 x 8 VGA and Audio Matrix Switch Fast matrix switching for eight VGA sources to eight VGA screens with audio.	1920 x 1200: VGA	•	—	—	8 x 8 Switch (AVSW-VGA8X8-B)

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▶ For keyboard, video, and mouse (KVM) types of switches, see blackbox.co.uk

DisplayPort Switches

Switch two or four DisplayPort sources to a single DisplayPort display

CONNECTORS	CABLE	FEATURES	SWITCHING
DisplayPort	Native	Speaker	Push Button
			Serial
			IR Remote

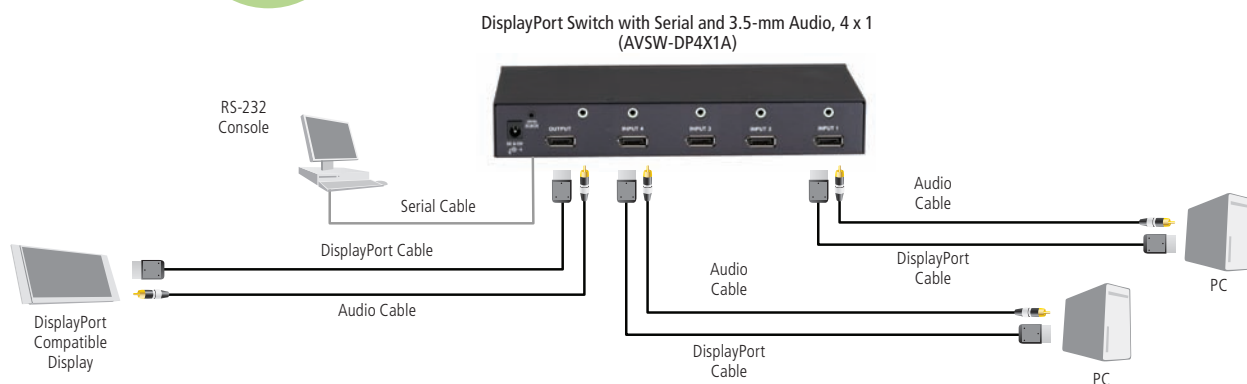


AVSW-DP4X1A

Switch
on newer
DisplayPort
computers!



AVSW-DP2X1A



- Switch between two or four DisplayPort sources for output on a high-resolution DisplayPort display.
- Support HD resolutions up to 2560 x 1600p.
- Plug and play. No software required for operation.
- All support both audio and video simultaneously on the DisplayPort connectors.
- Models with audio and serial feature separate 3.5-mm audio ports plus an RS-232 port for serial control.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Switch between video from DisplayPort equipped electronics devices for reliable output on a DisplayPort compatible display. The switches eliminate the need to manually switch DisplayPort cables between sources.

All models can be controlled using a push button.

The DisplayPort Switches with Serial and 3.5-mm Audio also support RS-232 switching control, as well as control with an IR remote controller. With the separate audio channel, you can transmit analog audio to external speakers in a digital signage or other multimedia distribution application.

On all three models, LEDs indicate which AV equipment source is being displayed.

Ideal for conference rooms and classrooms, the switches feature latching connectors for more secure inputs and outputs—great for areas prone to accidental unplugging of AV equipment.

TECH SPECS

Resolution (Maximum) — Full HD (2560 x 1600)

CE Approval — Yes

RoHS — Yes

Connectors — Video inputs: (2) or (4) DisplayPort 1.1 F;

Video outputs: (1) DisplayPort 1.1 F;

AVSW-DP2X1A and AVSW-DP4X1A also have:

Audio inputs: (2) or (4) 3.5-mm audio jacks;

Audio output: (1) 3.5-mm audio jack;

Serial control: (1) 1.7-mm jack

Power — External: Input: 100–240 VAC, 50–60 Hz;

Output: 9 VDC, 1.5 A (max.)

Size — AVSW-DP2X1: 0.8"H x 6.2"W x 2.6"D

(2 x 15.7 x 6.6 cm);

AVSW-DP2X1A, AVSW-DP4X1A:

1.4"H x 8.7"W x 3.9"D (3.6 x 22.1 x 10 cm)

Weight — AVSW-DP2X1: 0.7 lb. (0.3 kg);

AVSW-DP2X1A: 1.4 lb. (0.6 kg);

AVSW-DP4X1A: 1.6 lb. (0.7 kg)

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Item Code

DisplayPort Switch

2 x 1 AVSW-DP2X1

DisplayPort Switch with Serial and 3.5-mm Audio

2 x 1 AVSW-DP2X1A

4 x 1 AVSW-DP4X1A

♦ Both include (1) switch, (1) IR remote, and (1) serial cable.

For DisplayPort, HDMI, DVI, and VGA cables, see the Cables section.

HDMI Switches • HDMI Switches with Audio and Serial Control

For switching between multiple sources for display on a common HDMI screen

- Support HD resolutions up to 1080p and 1920 x 1200.
- Plug and play. No software required for operation.
- DDC2B compatible for connections to newer digital displays.
- HDCP 1.1 compliant for protected content.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

AVSW-HDMI2X1



Ideal for meeting rooms, these switches eliminate having to manually switch various HDMI cables between sources for showing video on a single HDMI screen.

On the standard models, you switch using a single top-panel push button. LEDs indicate which source is being displayed.

The switches with audio and serial connectors, however, can be controlled from front-panel push buttons, an IR remote, or an RS-232 console. They support serial control as well as unidirectional audio on two or four 3.5-mm jacks (amplified audio input recommended).

HDMI Matrix Switches

Matrix switching for HDMI sources and devices

- Switch multiple digital sources to multiple digital displays in any combination.
- Control from the front panel, with the included IR remote, or from an RS-232 connection.
- Support resolutions up to 1080p.
- HDCP compliant for protected content.
- Signal boosters on the ports amplify HDMI signals up to 60 feet (18.2 m).
- Support the latest HDMI audio formats, including Dolby® TrueHD and DTS-HD.
- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Featuring a maximum bandwidth of 6.75 Gbps, these HDMI Matrix Switches support sharp, highly defined video in HD resolutions of up to 1080p.

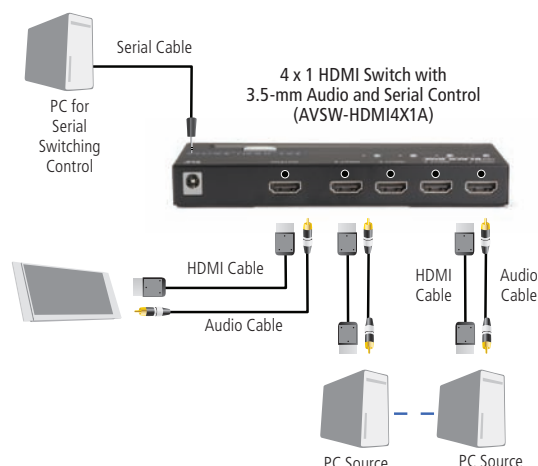
Any input can be routed to any output, or the same input can be routed to all outputs or any combination, eliminating the need to manually move cables to display HDMI video from different sources on different screens.

Ideal for corporate theaters, meeting rooms, classrooms, and broadcasting studios, HDMI

Matrix Switches carry the high-speed digital video signaling of TMDS formats for 12-bit Deep Color.

Switch using front-panel buttons, the included IR remote controller, or an RS-232 connection via a computerized control system.

What's more, the HDMI Matrix Switches have an IR signal extension port (and include an IR extender receiver), which enables you to use the IR remote controller to switch ports on the unit from another room, up to 984 feet (300 m) away.



CE Approval — Yes
RoHS — Yes

Item	Code
HDMI Switches	
2 x 1	AVSW-HDMI2X1
4 x 1	AVSW-HDMI4X1
HDMI Switches with 3.5-mm Audio and Serial Control	
2 x 1	AVSW-HDMI2X1A
4 x 1	AVSW-HDMI4X1A
♦ 4 x 1 model also includes a rackmount kit.	

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3D
capable!



AVSW-HDMI2X2

CE Approval — Yes
RoHS — Yes

Item	Code
HDMI Matrix Switches	
2 x 2	AVSW-HDMI2X2
2 x 4	AVSW-HDMI2X4
4 x 2	AVSW-HDMI4X2
♦ All include (1) switch, (1) IR remote controller, and (1) RS-232 cable.	

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4 x 4 and 8 x 8 HDMI Matrix Switches

Easy matrix switching for up to eight HDMI sources and eight HDMI displays

- Switch high-resolution video plus digital audio from multiple sources to multiple displays in any combination.
- Control from the front panel, with the included IR remote controller, or from an RS-232 console.
- Send digital signals to any or all outputs simultaneously.
- HDCP compliant and support auto EDID.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

These matrix switches provide unrivaled versatility when controlling video output on HDMI® displays. Each input can be routed to any output, or the same input can be routed to all outputs or any combination, eliminating the need to manually move cables to display HDMI video from different sources on different screens.

The switches support PC XGA to WUXGA 1920 x 1200 resolutions and HDTV/DTV resolutions of 480i/480p, 576i/576p, 720p, 1080i, and 1080p. They also carry the high-speed digital video signaling of TMDS formats for 10-, 12-, 16-, or 32-bit Deep Color, and they provide

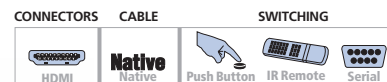


VSW-HDMI8X8-B

3D capable!



VSW-HDMI4X4-B



support for 19:10 aspect ratio.

In addition to built-in EDID tables and manual copy functions, the switches also feature unique, automatic EDID handling, which ensures optimum display compatibility with any connected HDMI or DVI screen without having to manually copy the EDID table from one of the screens.

The switches are ideal for any venue where multiple HD displays must be managed: corporate theaters, classrooms, and studios. When used with digital signage, they enable you to quickly switch a display from one source to another.

Front-panel LEDs show automatic scanning input and output status. In addition, the switches remember the last state during a power cycle.

CE Approval — Yes
RoHS — Yes

Item	Code
HDMI Matrix Switches	
4 x 4	VSW-HDMI4X4-B
8 x 8	VSW-HDMI8X8-B

◆ Include (1) switch, (1) IR remote controller, (1) IR extender receiver, (1) RS-232 cable, and 19" rackmount brackets.

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DVI Switches

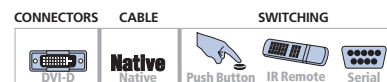
Switch DVI video from multiple sources to a single DVI screen



VSW-DVI3X1

NOTE: Support digital video only.

- Easy to control using front panel or from the included IR remote.
- Route video from three, four, or eight sources.
- HDCP compliant.
- Tested to guarantee resolution up to 1080p without signal degradation.
- Amplifies video more than 60 feet (18.2 m).
- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



CE Approval — Yes
RoHS — Yes

Item	Code
DVI Switches	
3 x 1	VSW-DVI3X1
4 x 1	VSW-DVI4X1
8 x 1	VSW-DVI8X1

◆ Include (1) switch and (1) IR remote controller.

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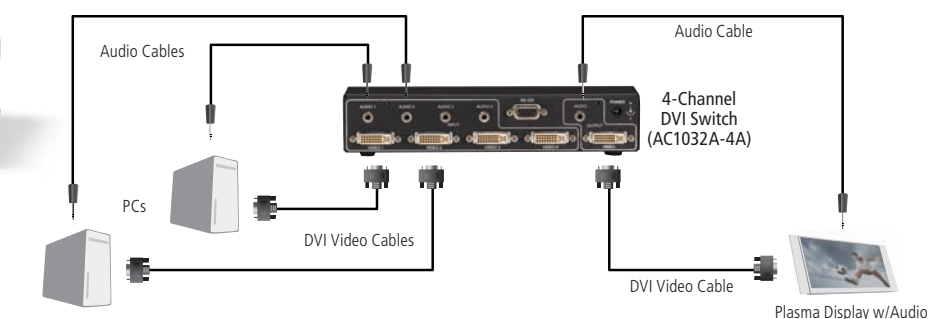
DVI Switches with Audio and Serial Control

Route multiple DVI-D video and audio inputs to a single display



AC1032A-4A

- Switch from multiple DVI-D devices to a common DVI-D display using an RS-232 console.
- Resolutions up to 1080p on HDTVs.
- Support input cabling up to 65 feet (19.8 m) and drive DVI-D signals up to 50 feet (15.2 m).
- Skip unused inputs automatically.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



NOTE: Support digital video only.

CE Approval — Yes
RoHS — Yes



Item	Code
DVI Switches with Audio and Serial Control	
2-Channel	AC1032A-2A
4-Channel	AC1032A-4A

8 x 8 DVI-D Matrix Switch with Audio

For fast switching of DVI sources and displays with audio

- Route HD video and audio from any input to any output.
- Features 340-MHz video bandwidth and 6.75-Gbps speeds.
- Supports 3D formats and 36-bit Deep Color depths.
- Easy to control using front-panel buttons, the included IR remote, or via an RS-232 console.
- Preview output port for mirroring video displayed on Output 1.
- Fully HDCP compliant and Blu-ray ready.
- 1U-high rackmountable chassis.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

This high-performance matrix routing system brings greater control to multimedia applications where you need to quickly switch both video and audio between various DVI sources and displays.

It's particularly useful in any digital signage or control room application when you need to frequently reroute source input for screen output. Use the matrix switch to switch 1080p DVI and UXGA/WUXGA/DVI resolutions to any connected display device, and even select and distribute to any of its outputs simultaneously.

The matrix switch supports digital TMDS formats, including 3D and Deep Color resolutions,

and features data rates up to 6.75 Gbps and 340-MHz video bandwidth. It has 3.5-mm jacks for source audio and speaker connections.

Front-panel LEDs show input and output status, and the switch stores up to 16 preset switching configurations. Also, it remembers the last switching state in case of power failure.

Plus, the switch is fully HDCP compliant and supports four modes of EDID for learning various HDTV resolutions and ensuring optimum video card communications with the latest displays.

CE Approval — Yes
RoHS — Yes



What's included:

- 8 x 8 DVI-D Matrix Switch with Audio
- IR remote control unit
- IR remote receiver
- Rackmounting hardware
- Serial RS-232 cable
- CD containing Windows GUI

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Item Code
8 x 8 DVI-D Matrix Switch with Audio
AVSW-DV18X8-B

DVI Matrix Switches with Audio & with Audio and Serial Control

High-resolution matrix switching for demanding DVI applications

- Easily route video signals from two or four DVI sources to four or two DVI display devices (LCDs, projectors, etc.) and speakers.
- Switch using the front-panel buttons or with the included remote control unit. The AC1125A also offers RS-232 control.
- Auto Scan with user-selectable scan intervals.
- Switch both video and audio directly, and turn both video and audio on or off at each individual port.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years



AC1124A

NOTE: Support digital video only.

CE Approval — Yes
RoHS — Yes



What's included:

- DVI Matrix Switch
- IR remote control unit
- Mounting plate and hardware
- Set of rubber footpads
- Serial RS-232 cable (AC1125A only)

Item Code
2 x 4 DVI Matrix Switch with Audio
AC1124A
4 x 2 DVI Matrix Switch with Audio and Serial Control
AC1125A

Need peripheral support?

See our DKM FX Video and Peripheral Matrix Switches

- Enable super-fast crosspoint switching of HD video in KVM enterprises.
- For matrix switching of DVI-D, USB-HID, USB 2.0, RS-232, and audio.
- Feature a modular and scalable design for as many as 288 ports.



For more information, visit blackbox.co.uk



VGA Switches with Serial and 3.5-mm Audio

Switch between four or eight VGA sources for output on a single HD display or projector



AVSW-VGA4X1A

- Route video plus audio from multiple sources to a single display.
- Provide high-resolution output, up to 1920 x 1200 and 1920 x 1440 VGA resolutions, as well as 1920 x 1080.
- Support serial switching control function plus IR control.
- LEDs show your selected VGA input source.
- Rackmountable. Hardware included.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Use these low-priced, highly reliable VGA Switches with Serial and Audio anywhere you need to route both video and audio from four PCs or other VGA sources to a common display, and enjoy high resolutions on the screen.

They're ideal for classrooms, control centers, and digital signage applications, as well as for use at meetings and seminars where you need to switch between multiple sources for output on a VGA monitor or through a VGA projector.

The switches work with an array of VGA, SVGA, and multisync monitors.

CONNECTORS	CABLE	FEATURES	SWITCHING
VGA	Native	Speaker	Push Button Serial IR Remote

What's included:

- VGA Switch with Serial and Audio
- (1) power supply
- (4) rubber feet
- (1) serial DB9 to 1.7-mm barrel adapter
- (2) rackmount ears with screws
- User manual

In addition, the switches are easy to set up and use with front-panel push button switching control or control from an RS-232 workstation. Because they support IR remote passthrough, you can also control switching in the vicinity of the VGA screens with a remote controller.

CE Approval — Yes
RoHS — Yes

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Item	Code
VGA Switches with Serial and 3.5-mm Audio	
4 x 1	AVSW-VGA4X1A
8 x 1	AVSW-VGA8X1A

Compact VGA Switches

Switch between VGA sources from a central location

- Control manually by pushing a button or via an RS-232 control device (serial cable is included).
- Enable video cable distances up to 150 feet (45.7 m) and crisp 1600 x 1200 resolution—buffered output protects the signal integrity.
- All except the AC505A can be set up to cycle between video sources automatically.
- You can also blank and unblank an output via a serial port command.
- Fit into tight spaces and withstand heavy use.
- Audio versions feature 3.5-mm stereo jacks and an RFI-shielded steel enclosure.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Compact VGA Switches go much farther than ordinary video switches in both the distance and resolution they support.

These solid-state, electronic switches not only use boosters to drive VGA video signals up to 150 feet (45.7 m), they also offer a crisp resolution of up to 1600 x 1200.

Use the switches, for instance, in a conference room where two or four laptop users can take turns projecting their screen images onto a single big-screen VGA monitor.

They're also useful anywhere you need to use fewer monitors for displaying video sources.

Control switching via an attached RS-232 device (serial control cable is included). You can also blank output from one source or switch manually.

CONNECTORS	CABLE	FEATURES	SWITCHING
VGA	Native	Speaker	Push Button Serial



AC505A-2A-R2

CE Approval — Yes
RoHS — Yes

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Item	Code
Compact VGA Switches	
2 x 1	AC505A
2 x 1 with Audio	AC505A-2A-R2
4 x 1	AC506A
4 x 1 with Audio	AC506A-4A

♦ All switches include (1) serial cable. The AC505A also includes (1) push button cable.

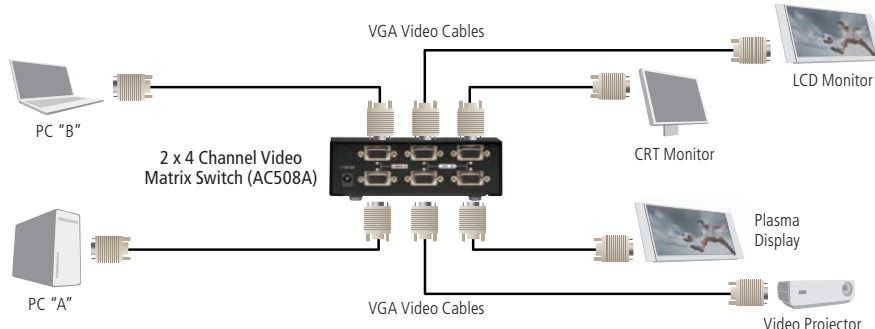
Video Matrix Switches

Show video from two separate sources on multiple displays

CONNECTORS	CABLE	SWITCHING
 VGA	 Native Native	 Push Button



AC508A



- Share four or eight video display devices between two computers.
- Front-panel buttons enable you to receive the image from either PC.
- Cascadable for even more flexibility in expanded setups.
- Built-in video signal enhancement for placing monitors up to 213.2 feet (65 m) away.
- Work with VGA, SVGA, XGA, and multisync display devices.
- Comply with VESA DDC, DDC2, and DDC2B standards (for video out Ports 1 and 2).
- Ideal for multimedia control rooms or stations, test bench facilities, classrooms, or distributing media from the data center.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

These Video Matrix Switches combine video sharing and video splitter capabilities in one compact device.

With one of these switches, you can share up to eight video display devices between two computers. Intelligent functionality enables you to use a range of devices, from CRT and LCD monitors to video projectors.

The switches support 1920 x 1440 resolution and provide 250-MHz bandwidth for clarity and integrity when connecting multiple sources to multiple screens.

What's more, a built-in signal booster amplifies and extends video signals more than 200 feet—making the switches great for remote display applications where you want to distribute images from a central, secure room to public or non-secure areas.

Lightweight and easy to set up, they can be used by demonstrators at trade shows or conferences to disseminate graphically rich content on multiple screens viewed by visitors. To cascade switches for an expanded setup, simply run a video cable from the "Video Out" port of one switch to the "Video In" port of the second switch.

Even better, their heavy-duty cases can withstand the rigors of temporary installations requiring quick setups and teardowns.

CE Approval — Yes

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Item	Code
Video Matrix Switches	
2 x 4	AC508A
2 x 8	AC509A

ServSwitch Brand Matrix Video Switch

Mix and match video displays from four PCs

CONNECTORS	CABLE	SWITCHING
 VGA	 Native Native	 Keypad  Serial

- Send video from up to four PCs to up to four video monitors in any combination.
- Show something different on each screen or the same video on each screen.
- All inputs are terminated and all outputs are buffered.
- Supports cabling up to 150 feet (45.7 m)—all outputs are buffered using special video amplifiers.
- Compatible with SVGA (RGBHV), RGBS, or RGB with resolutions up to 1600 x 1200 pixels.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Share and switch between four video sources for output to multiple monitors or displays with this high-bandwidth, keypad- or PC-controllable VGA/SVGA switch.

The ServSwitch™ Brand Matrix Video Switch is just what you need to set up a presentation for your trade show booth and provide real-time information updates on multiple screens.

The buffered outputs feature special video amplifiers for clear video at resolutions up to 1600 x 1200.

No special cables are required for source and screen connections. The switch uses ordinary VGA cable for all inputs and outputs.



Top: front view; bottom: rear view

CE Approval — Yes
RoHS — Yes

Item	Code
ServSwitch™ Brand Matrix Video Switch	
4 x 4	ACL0404A

◆ Includes (1) switch, (1) power supply, and (1) keypad.

VGA Matrix Switches

These programmable switches make it easy to route VGA and 1080p HD video to multiple screens!

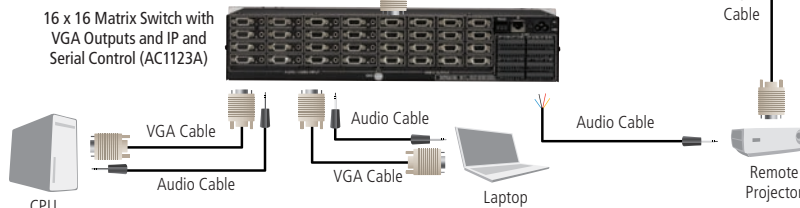


AC1121A

- Ideal for digital signage systems where you want to switch source inputs for output on various screens.
- For crosspoint switching of PC or HD (VGA or YPbPr) video signals.
- Work with 640 x 480 to 1920 x 1600 PC video and SD or HDTV Component video (YPbPr) from 480i to 1080p.
- Order with 16 or 32 ports (8 input/8 output or 16 input/16 output).
- Program to switch at specific times.
- Intuitive keypads for configuring ties.
- Switch using front-panel buttons or via one or two RS-232 interfaces (screw terminal and an RJ-45 port).
- To also switch remotely via an IP link, order model with 10BASE-T/100BASE-TX port (AC1121A or AC1123A).
- Models with RJ-45 outputs feature built-in extender transmitters.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

Versions for switching via an IP link!



▶ For technical specifications, see blackbox.co.uk

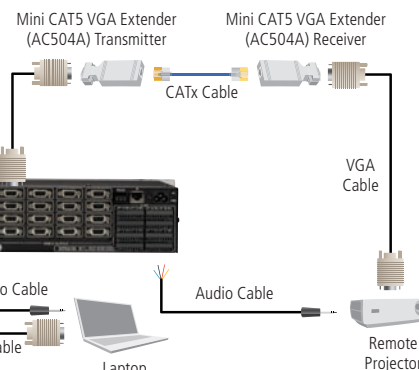
These high-end matrix switches enable easy crosspoint switching in multimedia or command and control applications. They provide 8 or 16 outputs, each capable of independently displaying any of 8 or 16 inputs in any combination.

Item	Code
VGA Matrix Switches	
VGA Outputs + Serial Control	
8 x 8	AC1120A
16 x 16	AC1122A
VGA Outputs with Audio + IP and Serial Control	
8 x 8	AC1121A
16 x 16	AC1123A
RJ-45 Outputs with Audio + Serial Control	
8 x 8	AC1120A-RJ45
16 x 16	AC1122A-RJ45

To connect a remote screen via the output on an AC1120A-AC1123A switch, order a...
Mini CAT5 VGA Extender Kit
AC504A

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Visit Our Website
For Pricing

CONNECTORS	CABLE	PERIPHERALS	SWITCHING
VGA	Native CAT5, 5e, 6	Speaker	OSD Push Button Serial IP



They can also be programmed to switch automatically between preset patterns at certain times of the day. Store up to 8 or 16 patterns for easy recall later. Plus, the outputs can be blanked out or muted.

To connect the output on the AC1120A-RJ45 and AC1122A-RJ45 to a remote screen, order:
Mini CAT5 VGA Extender Receiver
AC602A
...or order the single-gang wallplate version that mounts in a junction box...
Mini CAT5 VGA Extender Receiver Wallplate
AC504A-WP-R

FOR OPTIMUM PERFORMANCE, and a 20% savings, order...

VGA Video Cable with Ferrite Core, PVC, HD15, Male/Male, 50-ft. (15.2-m)

8 x 8 VGA and Audio Matrix Switch

Fast matrix switching for eight VGA sources to eight VGA screens with audio



- For crosspoint switching of high-resolution VGA signals in any combination.
- Send VGA signals along with audio to any or all outputs simultaneously.
- Outputs resolutions up to 1920 x 1200.
- Includes 3.5-mm jacks for stereo audio inputs and stereo speaker outputs.
- Control from the front panel, with its IR controller, or via an RS-232 link.
- LED readout shows input/output status.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

The 8 x 8 VGA and Audio Matrix Switch provides video routing speed and versatility when controlling video and stereo audio output on VGA monitors or displays.

It's ideal for any application where multiple displays with speakers must be linked to multiple sources and managed. Any input can be routed to any output, or the same input can be routed to all outputs or any combination. There's no need to manually move input and output cables.

CONNECTORS	CABLE	PERIPHERALS	SWITCHING
VGA	Native	Speaker	Push Button IR Remote Serial

What's included

- 8 x 8 VGA and Audio Matrix Switch
- IR remote
- IR receiver
- RS-232 cable (DB9 male/DB9 female)
- 12-VDC power supply with cord
- 19" rackmount brackets
- CD containing RS-232 control software driver

CE Approval — Yes
RoHS — Yes

Ring Sales or
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Item	Code
VGA and Audio Matrix Switch	
8 x 8	AVSW-VGA8X8-B

Buyer's Guide | Scalers & Converters

For product details and supported resolutions, see the following pages.

Solution/Description	Input Connector(s)	Output Connector(s)	Switchable	Code
Multi-Format AV to HDMI Switching HD Scaler Analog-to-digital converter, scaler, and switch with HDMI output supporting resolutions up to 1920 x 1200 (WUXGA) and HDTV up to 1080p.	(1) HDMI with audio, (1) VGA with audio, (1) Component with audio, (1) Composite with audio, (1) S-Video with audio, (1) optional audio	(1) HDMI; audio jacks	•	AVSWSC-MULTI-HDMI
Multi-Format HD Video Scaler Digital/analog scaler that accepts PC RGB (up to UXGA), Component (480i up to 1080p), and DVI (up to WUXGA), scaling them to DVI and analog outputs.	(1) DVI-I, (1) VGA, (1) Component	(1) DVI-I, (1) VGA F	•	AC139A
Video to PC/HDTV Switching Scaler Upconverts from analog video, enables specification as either Component or PC video (up to 1080i or SXGA resolutions); audio version also available.	(1) Component, (1) Composite, (1) S-Video, (1) VGA, plus audio jacks on AC138A version	(1) HD15 with (1) VGA cable and (1) HD15/(3) RCA cable (YPbPr); plus audio jacks on AC138A version	•	AC136A-R2 AC138A
VGA/HDTV Video Scaler Plus VGA/HDTV to VGA/HDTV scan rate converter that outputs a specified resolution and refresh rate regardless of the input.	(1) VGA	(1) VGA; (1) VGA (local loop out with mirroring capabilities)	—	AC345A-R2
Multi-Format AV Scaler with DisplayPort For scaling digital DisplayPort*, HDMI*, and DVI and analog VGA, Component, S-Video, and Composite video for VGA and HDMI 1080p output; with SPDIF and 2.5-mm external audio on all channels except *.	(1) DisplayPort, (1) HDMI, (1) DVI-I with audio, (2) Composite with audio, (1) S-Video with audio, (1) Component with audio, (1) VGA with audio	(1) HDMI, (1) VGA with audio	•	AVSC-7DA-HDMI
PC Video/Component Video to HDMI Converter with Audio Converts analog VGA PC video and Component YPbPr video for display on an HDMI screen.	(1) VGA with audio (also includes an HD15-to-BNC cable for Component video input)	(1) HDMI	—	AC551A
PC to Video Converter Converts VGA for display on an NTSC TV.	(1) VGA	(1) Composite, (1) S-Video, (1) VGA	—	AC336A
VGA to Video Ultimate Pro Converts VGA to Composite, S-Video, or Component video signals.	(1) VGA	(1) SCART (RGB), (1) S-Video, (1) Composite, (1) Component	—	AC340A
Video to VGA Portable Converts video from Component, S-Video, or Composite source for VGA display.	(1) Component, (1) Composite, (1) S-Video, (1) VGA (passthrough), plus audio jacks	(1) VGA with audio	—	AC328A-R4
VGA to RGB Converter Converts VGA to RGB sync-on-green.	(1) VGA	(1) RGB sync-on-green	—	AC312A
HDMI to 3G-SDI/HD-SDI Converter Converts HDMI for output on two SDI interfaces; supports loopout and daisy chaining via one SDI port.	(1) HDMI	(1) SDI, (1) SDI (for direct or loopout/daisy chaining connection)	—	VSC-HDMI-SDI
3G-SDI/HD-SDI to HDMI Converter Converts SDI for output on an HDMI display.	(1) SDI	(1) HDMI, (1) SDI (passthrough)	—	VSC-SDI-HDMI
VGA/DVI to DVI-D Converter Converts and scales VGA video and DVI-D video for single-link DVI-D output.	(1) DVI-I (with VGA adapter cable)	(1) DVI-D	—	ACS411A-R2
VGA/DVI/Video/EGA/CGA to DVI-D Converter Converts and scales EGA/CGA, VGA, Component, S-Video, Composite, and DVI-I video signals for single-link DVI-D output.	(1) DVI-I (with VGA, Component YPbPr and S-Video adapter cables), (1) EGA/CGA (DB9)	(1) DVI-D	—	ACS412A
VGA/DVI/RGB to DVI-D Converter Converts and scales VGA, RGBHV, and DVI-I video for single-link DVI-D output.	(1) DVI-I (with VGA adapter cable); (1) Component RGBHV on (5) BNC	(1) DVI-D	—	ACS414A
VGA/DVI/Video/SDI to DVI-D Converter Converts and scales SDI, VGA, Component (YPbPr), S-Video, Composite, and DVI-I video signals for single-link DVI-D output.	(1) DVI-I (with VGA adapter cable), (1) Component, (1) S-Video, (1) SDI, (1) or (4) Composite	(1) DVI-D	—	ACS413A

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What do you need: a converter or a scaler?

If you're not sure, give our FREE Tech Support experts a call on 0118 965 6000.

Video converters, at their most basic, convert and reformat signals from one video interface for another type of video interface.

A scaler with scan conversion technology, however, samples the input signal at full resolution and converts the image into a signal suitable for display on a TV or an HDTV. Resolution matches the native resolution of the connected display.

Usually, the scaling involves "upconverting" the video signal so the resolution is accurately framed for a newer display type. The actual scaling is a process where the number of display pixels is mapped and adjusted to accurately match the display's resolution.

Also, deinterlacing technology with advanced motion compensation intelligently scales the source signal to the desired resolution with virtually no artifacts or distortion.

Again, if you need help choosing a solution, just give us a call.

Multi-Format AV to HDMI Switching HD Scaler

Convert and scale multiple types of video and audio for digital HDMI output

- Functions as an analog-to-digital video converter, scaler, and switch.
- Five input types: VGA, Composite, Component, S-Video, and HDMI.
- HDMI output supports PC resolutions up to 1920 x 1200 (WUXGA) and HDTV resolutions up to 1080p.
- Switch scaled digital output to any input.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

This device eliminates the need to buy several devices to convert, scale, and switch inputs when routing analog signals to a digital display.

Ideal for digital signage, AV distribution, and corporate theater applications, it scales analog PC, Component, Composite, and S-Video input for digital display at a number of different resolutions on newer HDMI screens.

Advanced scaling gives you clear output. You can also reformat HDMI input for output on an HDMI screen at another resolution.



The scaler also converts digital and analog audio into digital format, supports EDID for optimized video card/monitor communications, and features adaptive 3D comb filter, digital noise reduction, and video deinterlacing.

CE Approval — Yes
RoHS — Yes



Video formats supported

Input:

HDMI/DVI: 480i/576i, 480p/576p, 720p @ 60/50 Hz, 1080i @ 60/50 Hz, 1080p @ 60/50 Hz, VGA @ 60/72/75/85 Hz, SVGA @ 56/60/72/75/85 Hz, XGA @ 60/70/75/85 Hz, SXGA @ 60/75/85 Hz, UXGA @ 60 Hz, WXGA @ 60 Hz (1280 x 800), WSXGA @ 60 Hz (1680 x 1050), WUXGA @ 60 Hz (1920 x 1200), WXGA+ @ 60 Hz (1440 x 900), SXGA+ @ 60 Hz (1400 x 1050), WSXGA @ 60 Hz (1680 x 1050), WUXGA @ 60 Hz (1920 x 1200); VGA (PC): All the above except 480i/576i, 480p/576p; Component (YPbPr): 480i/576i, 480p/576p, 720p @ 60/50 Hz, 1080i @ 60/50 Hz, 1080p @ 60/50 Hz

Output:

HDMI/DVI: 480i/576i, 480p/576p, 720p @ 60/50 Hz, 1080i @ 60/50 Hz, 1080p @ 60/50 Hz, VGA @ 60 Hz, SVGA @ 60 Hz, XGA @ 60 Hz, SXGA @ 60 Hz, UXGA @ 60 Hz, WXGA @ 60 Hz (1280 x 800), WXGA+ @ 60 Hz (1440 x 900), SXGA+ @ 60 Hz (1400 x 1050), WSXGA @ 60 Hz (1680 x 1050), WUXGA @ 60 Hz (1920 x 1200)

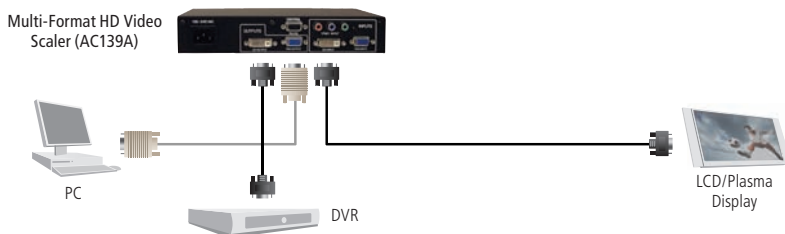
Item Code

Multi-Format AV to HDMI Switching HD Scaler
AVSWSC-MULTI-HDMI

- ◆ Includes (1) scaler, (1) power supply, (1) Composite video/audio cable, (1) Component (YPbPr) cable, (1) IR remote controller, and (1) user manual.

Multi-Format HD Video Scaler

Need to convert different formats for display?
Save money and time by using just one scaler



- A powerful, high-definition digital (DVI/HDMI) and analog (PC VGA/YPbPr) scaler that does the job of multiple products, making your job a lot easier.
- Produces professional-grade, superior video output for a perfect image on an LCD or other digital signage display.
- Accepts PC RGB (up to UXGA), HD Component (480i up to 1080p), and DVI (up to WUXGA) and scales them to DVI and analog outputs at the resolutions you specify.
- HDCP (HDMI) compliant DVI input and output.
- Output resolution selectable from 480i to 1080p (HDTV) and VGA to WUXGA (PC).
- Provides sharp, flicker-free output.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

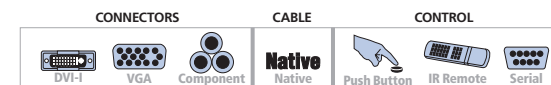
Video formats supported

Input:

DVI/HDMI: 480i/576i, 480p/576p, 720p @ 60/50 Hz, 1080i @ 60/50 Hz, 1080p @ 60/50 Hz, VGA @ 60/72/75/85 Hz, SVGA @ 56/60/72/75/85 Hz, XGA @ 60/70/75/85 Hz, SXGA @ 60/75/85 Hz, UXGA @ 60 Hz, WXGA @ 60 Hz (1280 x 800), WSXGA @ 60 Hz (1680 x 1050), WUXGA @ 60 Hz (1920 x 1200); VGA (PC): All the above except 480i/576i, 480p/576p, 1080i; YPbPr: 480i/576i, 480p/576p, 720p @ 60/50 Hz, 1080i @ 60/50 Hz, 1080p @ 60/50 Hz

Output:

DVI/HDMI: 480i/576i, 480p/576p, 720p @ 60/50 Hz, 1080i @ 60/50 Hz, 1080p @ 60/50 Hz, VGA @ 60 Hz, SVGA @ 60 Hz, XGA @ 60 Hz, SXGA @ 60 Hz, UXGA @ 60 Hz, WXGA @ 60 Hz (1280 x 800), WXGA+ @ 60 Hz (1440 x 900), SXGA+ @ 60 Hz (1400 x 1050), WSXGA @ 60 Hz (1680 x 1050), WUXGA @ 60 Hz (1920 x 1200); HD15: All the above except for WSXGA, WUXGA



Front-panel, IR-remote, and RS-232 controllable, the scaler features adjustable brightness, contrast, and RGB levels so you get professional-grade, superior video output on LCDs or other HD displays.

NOTE: For HDMI connections, you'll need an adapter. To order, call our FREE Tech Support.

CE Approval — Yes
RoHS — Yes

Item Code

Multi-Format HD Video Scaler
AC139A

- ◆ Includes (1) scaler, (1) IR remote controller, (1) power cord, and (1) user manual.

For product specifications, as well as more converters and scalars, go to blackbox.co.uk

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Video to PC/HDTV Switching Scalers with or without Audio

Professional multiformat switchers and scalars for HDTV outputs up to 1080i



AC138A: top: front view;
bottom: rear view

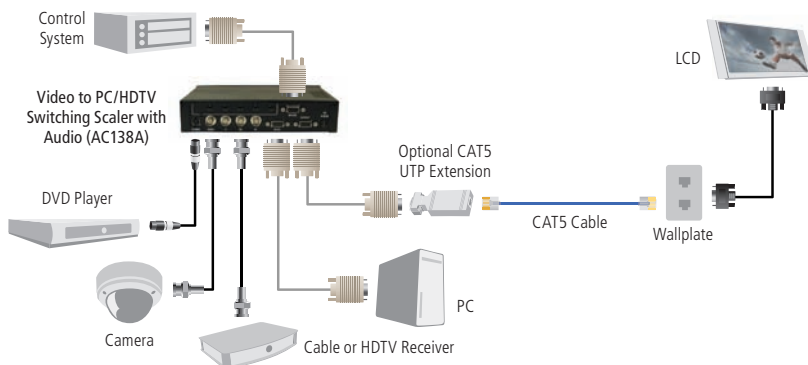
- Upconvert from various analog inputs for high-resolution PC or HDTV output.
- Features four different inputs: PC, Component, Composite, and S-Video.
- Scaled output can be switched to any of the inputs.
- Enables you to specify output and resolution as either PC or Component video on an HDTV-ready set or display.
- Fine-tune sharpness and color, apply a 3D comb filter to stop jitter, and more.
- Switch using front-panel buttons, the included IR remote controller, or via an RS-232 connection.
- Digital noise reduction feature.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

This sophisticated box not only upconverts various types of analog video input for optimal display on an LCD or a plasma screen, but it also enables you to switch between four different video sources.

Specify output and resolution as either Component or PC video (with scaled output for 480p, 576p, 720p, and 1080i HDTV or VGA/SVGA/XGA/SXGA resolutions).

It supports Composite video (NTSC/PAL), S-Video (NTSC/PAL), Component video (SD/HD), and PC video inputs. For output, just specify the scaling and resolution as either RGBHV PC (up to SXGA) or YPbPr HDTV video (up to 1080i).

Time-based correction in its advanced frame buffer provides clean, glitch-free display.



Resolutions supported

Input: PC: VGA (640 x 480), SVGA (800 x 600), XGA (1024 x 768), SXGA (1280 x 1024), UXGA (1600 x 1200) (passthrough);
HDTV: 480i, 576i, 480p, 576p, 720p, 1080i, 1080p;
Scaled output: VGA (640 x 480), SVGA (800 x 600), XGA (1024 x 768), SXGA (1280 x 1024);
HDTV: 480p, 576p, 720p, 1080

CE Approval — Yes
RoHS — Yes

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Item	Code
Video to PC/HDTV Switching Scalers	
AC136A-R2	
with Audio	
AC138A	
◆ Include (1) scaler, (1) IR remote controller, (1) VGA cable, (1) S-Video cable, (1) Composite video cable, (1) BNC to RCA adapter, and RS-232 software.	

VGA/HDTV Video Scaler Plus

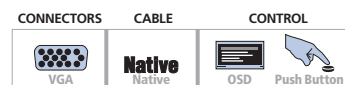
Scalable resolution plus video output mirroring—great for teleprompter use

- Scale PC or HDTV video up or down to any other PC or HDTV resolution.
- Provides VGA to Component video (YPbPr or RGBHV) and Component video (YPbPr or RGBHV) to VGA conversion.
- Horizontal mirroring for teleprompter and rear-projection systems.
- Also features a loop-out HD15 port for local monitor viewing.
- Large memory for real-time frame rate conversion.
- Automatically detects input mode and timing.
- Enables you to adjust sampling clock, phase, and screen position.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



This device provides the functions of a video scaler, scan converter, and format transformer in one unit. It scales PC or HDTV resolutions up or down to match that of another PC or HDTV.

The VGA/HDTV Video Scaler Plus also offers the unique capability to mirror the VGA input signal (VGA to VGA), and because it supports inverting the VGA output horizontally, it's perfect for teleprompters and rear-projection systems.



Resolutions supported

Input: PC: 640 x 480, 800 x 600, 1024 x 768, 1280 x 800, 1440 x 900, 1280 x 1024, 1400 x 1050, 1600 x 1200, 1680 x 1050, 1920 x 1080, 1920 x 1200;
HD: 480i, 480p, 576i, 576p, 720p, 1080i, 1080p
Output: PC: 680 x 480, 800 x 600, 1024 x 768, 1280 x 800, 1440 x 900, 1280 x 1024, 1400 x 1050, 1600 x 1200, 1680 x 1050, 1920 x 1080, 1920 x 1200;
HDTV: 1080i, 480p, 576i, 576p, 720p, 1080i, 1080p

CE Approval — Yes
RoHS — Yes

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Item	Code
VGA/HDTV Video Scaler Plus	
AC345A-R2	
◆ Includes (1) scaler, (1) VGA cable, (1) VGA to Component cable, and (1) universal power supply.	

Multi-Format AV Scaler with DisplayPort

A one-box solution for scaling analog and digital video inputs for either HDMI or VGA output

- Scales a wide range of HD formats for PC (XGA to WUXGA VESA) and HDMI output.
- Features VGA, Component, S-Video, Composite, DisplayPort, HDMI, and DVI-D video input ports.
- Outputs VGA and HDMI 1080p with 36-bit Deep Color video plus SPDIF and stereo audio.
- HDCP compliant and Blu-ray ready.
- Processes 3:2 and 2:2 film mode.
- Ideal outputting video in 3D and LCD and DLP projector applications.
- Control from front panel, IR remote control, via a Windows® GUI via RS-232 port, or from an Ethernet connection.
- Supports IR remote signal extension up to 1000 feet (300 m).
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Resolutions/timings supported

Input (maximum): Up to 1080p (60 Hz), 1920 x 1200, 2560 x 1600 (DisplayPort only);
Output (maximum): Up to 1080p (60 Hz), 1920 x 1200;
Output timings supported: 480i, 480p, XGA (60 Hz), 720p (60 Hz), 1080p (60 Hz), XGA (50 Hz), 576p, 720p (50 Hz), 1080p (50 Hz), UXGA (60 Hz), UXGA (50 Hz), WXGA (60 Hz), WXGA (50 Hz), XGA (60 Hz), XGA (50 Hz), 1400 x 1500 (50 Hz), 1400 x 1500 (60 Hz), 920 x 1200 (60 Hz), 1280 x 800 (60 Hz), SVGA (60 Hz), 1280 x 800 (50 Hz), 1080p (24 Hz), 720p (120 Hz), 720p (100 Hz), XGA (120 Hz)



This professional-grade, multiformat/multiport scaler features seven different inputs and enables you to output video in HDMI and VGA formats along with S/PDIF and stereo audio. Connect your Blu-ray player, PC, set-top box, and other electronics devices to its inputs and scale video to your desired resolution in no time at all.

It features four analog (VGA, Component YPbPr, S-Video, and Composite video) inputs along with digital video inputs for DisplayPort, HDMI, and DVI-D (along with audio).

The scaler supports full HDTV rates, including 2550 x 1600 DisplayPort resolutions, HDMI 1080p at 60 Hz, and higher DVI resolutions of 1920 x 1200, so it's ideal for any control or post-production application with a mix of source and display technology (such as in video broadcasting, medical imaging, and R&D simulation labs). Use it to connect a Mac® laptop with a DisplayPort output to an HDTV.

What's more, the high-performance scaler supports S-Video with a 3D comb filter, as well as HDMI 3D formats. Use it with a 3D-ready DLP® video projector for accurate 3D display. Featuring advanced 3D de-interlace functions, the scaler

supports frame packing, and side-by-side and top/bottom signal types for 3D, as well as a special algorithm for RH/LH synchronization in 24-Hz full HD applications.

Four preset color modes and an intelligent color adjustment for hue, saturation, sharpness, brightness, and more ensures crisp, accurate video reproduction.

The box autodetects the video input signal, determining the video standard format from an NTSC/PAL/SECAM system. Also, because every port has a corresponding audio jack for high-quality audio, there's no need for any external audio processors in your multimedia application.

You also get versatile control. It features push-button and IR remote control, and serial control (via a Windows GUI application or a third-party application running on an RS-232 console). You can even control it over an Ethernet LAN via its network port.

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Item	Code
Multi-Format AV Scaler with DisplayPort	AVSC-7DA-HDMI

◆ Includes (1) scaler, (1) IR remote controller, Windows control software, (2) rackmount brackets.

▶ For complete specifications, go to blackbox.co.uk

PC Video/Component Video to HDMI Converter with Audio

View your PC or DVD video on a high-definition display

- Use with HDMI plasma or LCD screens.
- Converts analog VGA signals so you can display your PC's video on an HDMI screen.
- Also converts Component video YPbPr signals from a legacy DVD player for a high-definition display.
- Simply flip a switch to choose between VGA or Component video conversion.
- Supports input resolutions of 1600 x 1200 at 60 Hz for VGA or up to 1080p for Component video.
- Stereo analog line level input.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



NOTE: This device is not a scaler or a scan converter.

CE Approval — Yes
RoHS — Yes



Formats supported

Component: 480i (60 Hz); 576i (50 Hz); 576p (60 Hz); 720p (50, 60 Hz); 1080i (50, 60 Hz); 1080p (30, 50, 60 Hz);
PC: VGA, SVGA (60, 72, 75, 85 Hz); XGA (60, 70, 75, 85 Hz); SXGA (60, 75, 85 Hz); UXGA (60 Hz); 1152 (70, 75, 85 Hz); XGAi (87 Hz)

Item	Code
PC Video/Component Video to HDMI Converter with Audio	AC551A

◆ Includes (1) converter and (1) HD15 to (3) BNC cable for Component video.

PC to Video Converter

The inexpensive and compact yet versatile video converter

- Convert video from your PC for your TV or projector with one simple box.
- No software or external power required.
- Resolutions up to 1280 x 1024 at 60 Hz.
- VGA input and output for simultaneous television/monitor viewing.
- Composite and S-Video outputs.
- Adjust screen size in VGA mode.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years



RoHS — Yes

NOTE: This converter can only be used with NTSC (North America) televisions and projectors.



What's included

- PC to Video Converter
- Composite video cable
- S-Video cable
- VGA cable
- USB power cable

Item Code

PC to Video Converter
AC336A

VGA to Video Ultimate Pro

Convert VGA to Composite, S-Video, or Component signals

- A portable, universal device that converts VGA for display on nearly any TV, or for recording on a videotape or recordable DVD.
- Features cable outputs for connecting your PC or Mac® video card to Composite video, S-Video, or Component video equipment.
- Works with most HDTV and plasma screens and video projectors.
- Offers stable video output at resolutions up to 1600 x 1200 (NTSC or PAL) for PCs and up to 1152 x 864 for Mac computers.
- "Plug-and-display" — no software needed.
- Powered from the PS/2 or USB interface.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

What's included

- Video converter
- Remote control with (3) AAA batteries
- Composite, S-Video, Component, and VGA Y cables
- (2) power cables (USB and PS/2)

TECH SPECS

Hardware Requirements — IBM® PC compatible, 286 or faster with VGA display card; or Mac G3/G4 or iMac® with CRT port

Video Requirements — TV or display with Composite video, S-Video (S-VHS), or Component video (YCbCr)

CE Approval — Yes

RoHS — Yes

Power — From the PS/2 or USB interface

Size — 1.3"H x 3.1"W x 4.9"D (3.3 x 7.9 x 12.4 cm)

Weight — 0.4 lb. (0.2 kg)



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Item Code

VGA to Video Ultimate Pro
AC340A

Video to VGA Portable

Get Component, S-Video, and Composite video on your VGA monitor today

- Enables you to display video from any Component, S-Video, or Composite source on any VGA monitor.
- Has Component, S-Video, Composite, and VGA (PC passthrough) inputs.
- Supports 1920 x 1080 resolution.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

The Video to VGA Portable from Black Box gives you video input capabilities on your VGA monitor in an easy-to-use package.

This converter has the flexibility to work with any VESA VGA-compatible monitor.

Plug a DVD player, camcorder, or any other video device into this converter and connect it to the VGA monitor. No software is required — set it up in 30 seconds. Motion-adaptive interfield deinterlacing provides crisp, clear video output when you're done.



A tiny, full-function remote control enables operation from where you sit, and push-button and remote control options enable you to set and save settings. Simply access the on-screen menu to control brightness, contrast, color, hue, and sharpness, and to select picture mode, resolution, and frequency. It also autosaves the last input source when you turn off the power.

The converter features an on-screen display with English, German, Italian, Spanish, French, and Dutch, and supports NTSC/PAL/SECAM standards for use around the world.



What's included

- Video converter
- IR remote control with battery
- 1-ft. VGA cable (male/male)
- AC power adapter

TECH SPECS

Resolution (Maximum) — 1920 x 1080

Video Requirements — TV or display with Composite video, S-Video (S-VHS), or Component video (YCbCr)

RoHS — Yes

Connectors — (2) HD15 (VGA) in/out; (1) Composite (RCA) in; (1) 4-pin mini DIN (S-Video) in; (1) 3.5-mm stereo audio in; (2) RCA stereo audio in; (1) 3.5-mm stereo audio out

Power — 100–120 VAC, 60 or 75 Hz, 1 amp;

Output: 6 VDC 800 mA

Size — 1.2"H x 2.2"W x 3.7"D (3 x 5.6 x 9.4 cm)

Weight — 0.3 lb. (0.1 kg)

Item Code

Video to VGA Portable
AC328A-R4

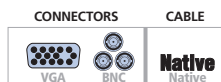
Ring Sales or
Visit Our Website
For Pricing

VGA→RGB Converter

Save when connecting to a multiport, high-end video switch

- An economical and easy way to convert VGA/XGA/SXGA connector signals to three RGB sync-on-green BNC coax connectors.
- Maximum resolution is 1600 x 1280 @ 75 Hz.
- Powered by the VGA/XGA/SXGA signals.
- Supports all emulated video modes, including CGA, MDA, EGA, VGA, XGA, and SXGA.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

▶ For specifications, see blackbox.co.uk



NOTE: The converter includes a cable for making easy connections to your PC's VGA port.

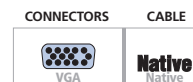
CE Approval — Yes

Item	Code
VGA→RGB Converter	AC312A

VGA DDC Ghost

Trouble-free VGA video connections for screens without DDC support

- Helps prevent boot problems.
- Plug it into a display. It reads all EDID information, storing it in its non-volatile memory.
- Then install it between a graphics card and a switch or extender.
- Can also use its built-in DDC emulation table.
- Ideal for digital signage, multimedia, or KVM switching systems with mixed analog and digital video, as well as for newer monitors supporting only a few high-resolution formats.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



The VGA DDC Ghost is ideal for mixed analog/digital video systems, and newer monitors that support only a few high-resolution formats.

CE Approval — Yes
RoHS — Yes

Item	Code
VGA DDC Ghost	ACS2100A

For external power, order...
5-V Power Supply
PS649-R3

Ring Sales or
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For Pricing

HDMI EDID Ghost

Optimize video output for any HDMI display

- Learns EDID data from an HDMI display so your video source conforms to optimal resolution settings.
- Ghost function saves the EDID of your displays, so the source boots with the correct settings.
- EDID learning functionality prevents computers from deactivating ports.
- Unique Audio Inventory feature provides two-channel, 5.1 Channel, and 7.1 Channel audio EDID learning.
- Supports resolutions up to 1080p.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes



What's included

- HDMI EDID Ghost
- USB power cable
- CD with user's manual
- Foot pad set

Item	Code
HDMI EDID Ghost	VG-HDMI

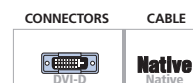
Ring Sales or
Visit Our Website
For Pricing

DVI-D EDID Ghost

Optimize video output for any DVI-D display

- Learns EDID data from a DVI-D display so your video source conforms to optimal resolution settings.
- Ghost function saves the EDID of your displays, so the source boots with the correct settings.
- EDID learning functionality prevents computers from deactivating ports.
- Supports resolutions up to 2560 x 1600.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes



What's included

- DVI-D EDID Ghost
- USB power cable
- CD with user's manual
- Foot pad set

Item	Code
DVI-D EDID Ghost	VG-DVI

DVI-D to VGA Adapter

View images from CPUs with a DVI output on a VGA monitor

- Take advantage of an existing VGA monitor.
- Converts single-link digital DVI signals from a graphics card on a computer for display on an analog VGA monitor or projector.
- Performs digital-to-analog conversion. Built-in "virtual DDC" converts VGA analog DDC signals to DVI digital DDC signals.
- Has DVI-D single-link female and HD15 female VGA connectors.
- Compact, lightweight, and easy to install.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



▶ For specifications, see blackbox.co.uk



What's included

- DVI-D to VGA Adapter
- DVI-D cable

CE Approval — Yes
RoHS — Yes

Item	Code
DVI-D to VGA Adapter	AC1038A

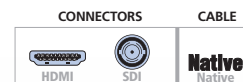
HDMI to 3G-SDI/HD-SDI Converter

An easy way to connect an HDMI source to SDI displays or other professional equipment

- Converts an HDMI® signal for output on two serial digital interface devices.
- Supports 3G-SDI, HD-SDI, and SD-SDI output on two coax BNC connectors.
- Purely digital, real-time conversion—with no loss of video or audio.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Ideal for professional video and broadcast engineering applications, this handy converter enables you to connect an HDMI source to a 3G-SDI, an HD-SDI, or an SD-SDI display. Use consumer electronics device or a camera with HDMI output in your SDI setup.

The device supports an array of HD video formats and provides digitally pure HDMI-to-SDI conversion, ensuring no loss in the conversion for both video and audio signaling. Use it in a TV studio, post-production, digital cinema, or other HDMI-to-SDI AV applications.



CE Approval — Yes
RoHS — Yes

Item Code
HDMI to 3G-SDI/HD-SDI Converter
VSC-HDMI-SDI

3G-SDI/HD-SDI to HDMI Converter

A low-cost way to use a standard HDMI screen instead of a pricey SDI display for SDI monitoring

- Converts serial digital interface video for output to an HDMI® display.
- Supports 3G-SDI (3 Gbps), HD-SDI, and SD-SDI input on coax BNC.
- Provides digitally pure SDI-to-HDMI conversion, with no video or audio loss.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

This economic converter enables you to connect a 3G-SDI, an HD-SDI, or an SD-SDI source for output on an HDMI display—just what you need to repurpose an ordinary HDTV for video monitoring in your SDI setup.

NOTE: Distance depends on the quality of the cable and the type of SDI source. Cable equalization supports maximum distances of 300 feet (90 m) for 3G-SDI; 500 feet (150 m) for HD-SDI; and 1000 feet (300 m) for SD-SDI.



SDI input and loopout side



CE Approval — Yes
RoHS — Yes

Item Code
3G-SDI/HD-SDI to HDMI Converter
VSC-SDI-HDMI

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For Pricing

Analog/DVI-I Video to DVI-D Converters

Professional-grade devices for outputting older video formats on a DVI-D screen

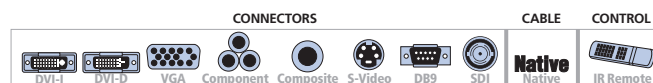
- Ideal for studios and labs with a mix of legacy and digital video equipment.
- Automatically detect and scale VGA resolutions up to 1920 x 1200.
- Also scales DVI-I for a DVI-D display.
- Feature more than 160 preset video formats stored in their internal tables.
- Also enable you to manually select the most suitable video mode, even if you don't know the input signal.
- Easy OSD control for resolution selection and video-correction tools.
- Include an IR remote for easy control.
- **STANDARD WARRANTY** — All: 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



ACS411A-R2

NOTE: ACS411A-R2 can mount in 19" rack using ACS2209A-RMK-R2, all other models use ACXMODH-RMK-R2.

CE Approval — Yes
RoHS — Yes



ACS412A

Call Sales or Visit the Website for Pricing

Item Code
VGA/DVI to DVI-D Converter
ACS411A-R2
VGA/DVI/Video/EGA/CGA to DVI-D Converter
ACS412A
VGA/DVI/RGB to DVI-D Converter
ACS414A
VGA/DVI/Video/SDI to DVI-D Converter
ACS413A

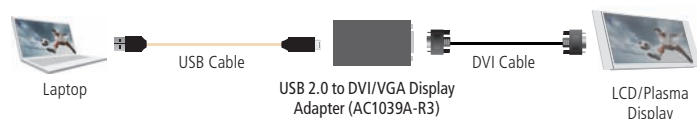
▶ For more information, go to blackbox.co.uk

USB 2.0 to DVI/VGA Display Adapter

The easy way to add a DVI display or projector to your PC through a USB port

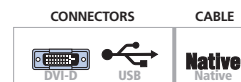
- Quickly add an LCD or a projector to a PC with this hot-swappable device.
- Or use two adapters to add two monitors for a total of three.
- Expands a viewing area with more room for extra views and windows.
- Configure as a mirror image, an extended desktop, and a primary display.
- USB Mini B and DVI-I ports. Supports resolutions of 1920 x 1080.
- Eliminates a video card. Plugs into a PC's USB 2.0 port.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes



Ideal applications:

- At the **workstation**: View large files and manage multiple applications much more effectively.
- At **trade shows**: Create multiple-screen presentations.
- In **finance**: Organize data streams by monitor or view charts and live information at the same time.
- Also great for graphic design and editing professionals.



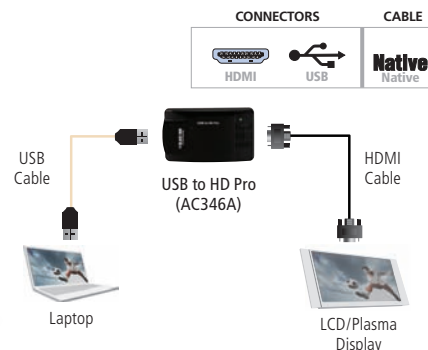
Item Code
USB 2.0 to DVI/VGA Display Adapter
AC1039A-R3

USB to HD Pro

Convert USB input to HDMI to play stored media on a big screen!

- An HDMI- and HDCP-compliant USB converter for streaming media files stored on your PC to an HD screen with HDMI input.
- Plug and play. Just connect to a PC's USB port with the included USB cable, then link it to a home theater system with an HDMI cable.
- Supports high quality (720p) images and sound.
- Enables you to rotate screen image 90°, 180°, or 270°, and adjust resolution and color.
- Also has an integrated audio equalizer.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes



Item Code
USB to HD Pro
AC346A

HDMI and DVI Pattern Generator

Save time when testing video calibration on HDMI and DVI screens

- Portable device for testing and evaluating HDMI HDTV/HDCP displays and panels.
- Helps ensure video reproduction and display are up to par in digital signage applications.
- Enables you to generate test patterns to troubleshoot video calibration issues with ease.
- A great tool for verifying that source video is reproduced accurately on a remote display.
- Uses 48 timings from 640 x 350 to 1920 x 1200 resolutions, and up to HDTV 1080p video.
- Ideal for healthcare, biotech, process engineering, and educational lab settings.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years



CE Approval — Yes
RoHS — Yes

Item Code
HDMI and DVI Pattern Generator
PG-DIG

- ◆ Includes (1) pattern generator, (1) HDMI cable, and (1) HDMI-to-DVI converter.

VGA Pattern Generator

Evaluate and test VGA signal reproduction on screens and panels

- Helps ensure VGA video signal reproduction and display are up to par.
- Enables you to generate test patterns to troubleshoot video calibration issues with ease.
- A great tool for verifying that source video is reproduced accurately on a remote display.
- Uses 38 timings for VGA resolutions from 640 x 350 up to 1680 x 1050, as well as 34 video test patterns for determining color performance and linearity fast.
- Supports H/V (TTL) and sync-on-green (SoG) type at 162-MHz frequency.
- Compact and durable.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years



CE Approval — Yes
RoHS — Yes

Item Code
VGA Pattern Generator
PG-VGA

- ◆ Includes (1) pattern generator and (1) VGA cable.

DVI-D Extender with Audio and EDID

Extend DVI and EDID monitor info up to 300 feet over CAT5e/6 cable!

- Uses inexpensive CAT5e or CAT6 cable to extend digital DVI video.
- Reads EDID information, optimizing the display to the fullest capability with the video card.
- Also extends stereo audio and bidirectional serial data.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Take DVI digital video farther than what's possible with ordinary DVI cable. The DVI-D Extender with Audio and EDID transmits PC video up to 300 feet (90 m) over CAT6 and 200 feet (60 m) over CAT5e. It supports 1920 x 1080 PC resolutions at shorter distances.

For HDTV, the DVI-D Extender with Audio and EDID extends 1080p video up to 150 feet (45.7 m) over CAT6 and 100 feet (30 m) over CAT5e. Lower HD resolutions (480p to 1080i) go farther, up to 300 feet (90 m) over CAT6.

What's more, for optimized video-card/display communications, the extender reads EDID information from a monitor connected to either the local DVI output port or the DVI port on the remote unit. EDID info learned from an output device can be used to emulate that actual device.

Plus, the extender can be controlled locally from the front panel, remotely using serial commands, or using its GUI software.

NOTE: Extends digital video only.

CE Approval — Yes
RoHS — Yes

Item _____ Code _____

DVI-D Extender with Audio and EDID
AC2000A

◆ Includes (1) local unit, (1) remote unit, and (1) serial control adapter.

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CONNECTORS	CABLE	PERIPHERALS
 DVI-D	 CAT5, 5e, 6	 Speaker Serial



DVI-D and Stereo Audio Fibre Extender Kits

Extend DVI multimedia over a single fibre—and display video on two remote displays!




- Transmit single-link DVI and audio over fiber with no deskewing or compression.
- No video distortion. Advanced input circuit equalizes and reclocks input signals.
- Receiver unit features dual DVI outputs for connecting two DVI displays.
- Support resolutions up to 1920 x 1200 at 165 MHz.
- DVI screens can be linked up to 45 feet (13.7 m) from the outputs.
- Single-mode version supports distances up to 15 kilometers (9.3 mi.); multimode model transmits up to 750 meters (2460.6 ft.).
- Great for digital signage in stadiums and transit stations.
- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

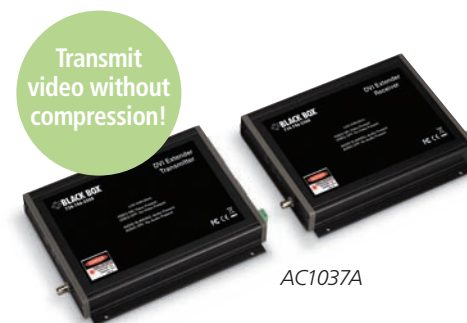
Use secure, ultra-clear fibre to extend DVI video and stereo audio to the edges of your digital signage or multimedia network.

Ideal for broadcast applications or anywhere you need to send high-definition video and stereo audio at great distances, these fibre extender kits transmit single-link DVI resolutions up to 1920 x 1200—without any image skewing.

Because they do this over a single fibre, you use your optical media more economically.

Use the system in office lobbies, airports, healthcare or educational settings, theaters, or retail PoS environments. By deploying DVI video, you get truer colors and sharper images than with conventional analog displays, and you make better use of graphics processors at the PC end.

CONNECTORS	CABLE	PERIPHERALS
 DVI-D	 Multimode-ST [®] Single-Mode-ST	 Speaker



NOTE: For simplex, single-mode fibre, call our FREE Tech Support.

CE Approval — Yes
RoHS — Yes

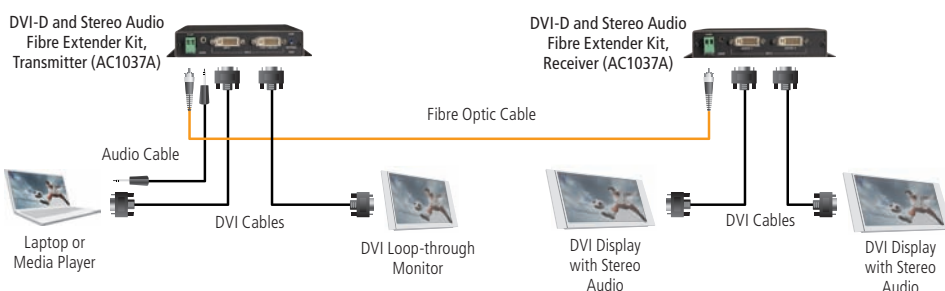
Item _____ Code _____

DVI-D and Stereo Audio Fibre Extender Kits
Single-Mode

AC1037A
Multimode AC1037A-MM

◆ Include (1) transmitter, (1) receiver, and (2) power supplies.

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CAT5 Video/RS-232 Extender Kit

Extend video and RS-232 signals up to 360 feet over CAT5 cable

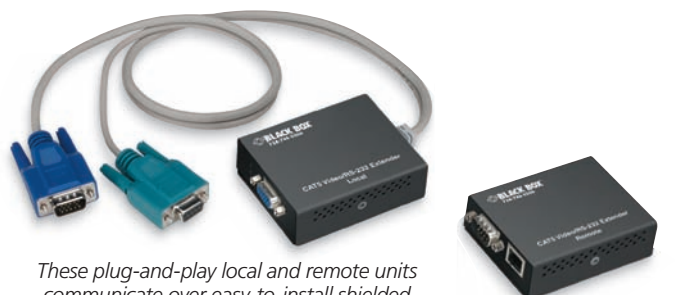
- Broadcasts a high-resolution VGA video image on a screen up to 360 feet (109.7 m) from your host PC.
- Enables you to remotely control a video projector with RS-232 serial connectors.
- Great for connecting touchscreens. Ideal for retail applications.
- Supports VESA resolution up to 1600 x 1200 at 75 Hz.
- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

The CAT5 Video/RS-232 Extender Kit makes it easy to broadcast a video image on a screen up to 360 feet away or remotely control a video projector that has RS-232 serial connectors. With the kit, it's simple and straightforward.

It's not only ideal for conference room and classroom environments, but it's also great for point-of-sale retail settings. For example, you can use the extenders to connect a screen in a high-

traffic area while maintaining control of the on-screen information through a locally attached PC and monitor.

The system uses bidirectional RS-232 for transmit and receive signals. And because local and remote units use shielded twisted pair for communications, the kit is easy to connect. Plus, there's no extra cable clutter.



These plug-and-play local and remote units communicate over easy-to-install shielded CAT5 cable.

CONNECTORS	CABLE	PERIPHERALS
VGA	CAT5	Touch screen Serial

CE Approval — Yes
RoHS — Yes

Item _____ Code _____

CAT5 Video/RS-232 Extender Kit
AC163A

◆ Includes (1) local unit, (1) remote unit, (2) power supplies, and (2) power cords.

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Get the video extender you need — *fast!*

Visit blackbox.co.uk

In several easy steps, find your exact AV extension solution.

Video Extender Selector

Connection

Interconnect Cable ⓘ

please select ...

Peripheral Support

☐ USB ⓘ

☐ Serial ⓘ

☐ Infrared extension ⓘ

Extender Options

☐ Audio ⓘ

☐ Convert to DisplayPort input to HDMI®

Video

Video Standard ⓘ

please select ...

Video Resolution ⓘ

please select ...

find extenders

It's easy:

First, choose your connections:

Interconnect Cable, Peripheral Support, and Extender Options.

Then, choose your video options:

Standard, Resolution, Maximum Receivers, and Distance.

DVI Splitters

Split your PC's DVI signals for display on two or four separate DVI screens

- Route DVI video to two or four screens.
- Support analog VGA video, too.
- Accurately reproduce the signal without attenuation or distortion.
- Support DVI-I (integrated analog and/or digital) video signals.
- Can be cascaded up to two levels deep for additional outputs.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

For split HD video to more than one display device, order a DVI Splitter.

Supporting a maximum resolution of 1920 x 1200 (WXGA) @ 60 Hz and 1080i for HDTVs, the splitters make it easy to use your computer to show a video presentation on multiple screens. They're also great for digital signage applications.

CE Approval — Yes
RoHS — Yes



AC1031A-R2-2



Item	Code	Call Sales or Visit the Website for Pricing
DVI Splitters		
2-Channel	AC1031A-R2-2	
4-Channel	AC1031A-R2-4	

♦ Both include (1) splitter, (1) DVI-I input cable, (1) power supply, and (1) user manual.

▶ For specifications see blackbox.co.uk

CAT5 Audio/Video Broadcaster

Broadcast real-time audio and video to remote displays over inexpensive CAT5 cable



AC156A-8



AC158A-PWREM

- Ideal for broadcasting real-time information, alerts, and advertising to digital signage in airports, in lobbies, or anywhere you want to reach a target audience.
- Sends video and mono audio to hundreds of displays over shielded CAT5.
- Supports VGA video up to 1600 x 1200 at 75 Hz—up to 360 feet (109.7 m).
- Great for schools, universities, or any classroom training application. Send a screen to an entire class or just one display at the push of a button.
- **STANDARD WARRANTY** — 3 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



CE Approval — Yes
RoHS — Yes

Ring Sales or Visit Our Website For Pricing

Item	Code	
First, order one broadcaster...		
CAT5 Audio/Video Broadcaster		
8-Port	AC156A-8	
...next, for system expansion, order a splitter...		
CAT5 Audio/Video Splitter		
8-Port	AC157A-8	
...then, order one remote for each display.		
CAT5 Audio/Video Remote Unit		
	AC158A-REM	
CAT5 Audio/Video Powered Remote Unit		
	AC158A-PWREM	

VGA/Buffered Video Splitters

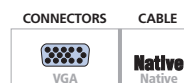
Send crisp video to 10 displays with these fully buffered splitters

- Send displays up to 250 feet (76.2 m)!
- 300-MHz bandwidth gives sharp images.
- VGA, Super VGA, XGA, and legacy monochrome compatible.
- Drive signals to 700 feet (213.3 m) with our 2-Channel VGA Booster (below).
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — AC159A-R3, AC160A-R3, AC058A-R3
RoHS — Yes except AC160A-R3



AC058A-R3: top: front view;
bottom: rear view



Item	Code	
VGA/Buffered Video Splitters		
2-Channel	AC056A-K-R4	
4-Channel	AC057A-K-R4	
6-Channel	AC159A-R3	
8-Channel	AC058A-R3	
10-Channel	AC160A-R3	

♦ Each model includes (1) splitter, (1) 5-ft. HD15 male/male VGA input cable; and (1), (3), (5), (7), or (9) 10-ft. male/female VGA video extension cable(s).

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2-Channel VGA Booster

Great video displays at great distances—up to 700 feet

- Display on two remote monitors simultaneously.
- VGA, SVGA, and XGA compatible.
- Easy plug-and-play operation.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years



Item	Code	
2-Channel VGA Booster		
	AC074A-R3	

♦ Includes (1) booster and (1) 5-ft. VGA input cable (male/male).

CAT5 VGA Video Splitters

Set up a digital signage distribution system over CAT5

- Use inexpensive CAT5 UTP cable.
- Simultaneously broadcast a VGA display to four remote VGA displays.
- Transmit up to 360 feet (109.7 m) with the Standard Remote Module.
- Double the distance to 820 feet (109.7 m) with the Long-Range Remote Module.
- Support resolutions up to 1280 x 1024.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

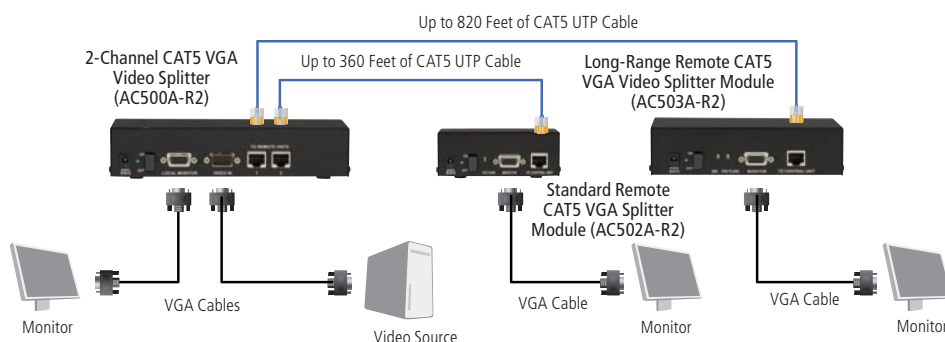


Top: AC502A-R2;
bottom: AC503A-R2

Top: AC501A-R2;
bottom: AC500A-R2

CONNECTORS	CABLE
VGA RJ-45	CAT5, 5e, 6 CAT5, 5e, 6

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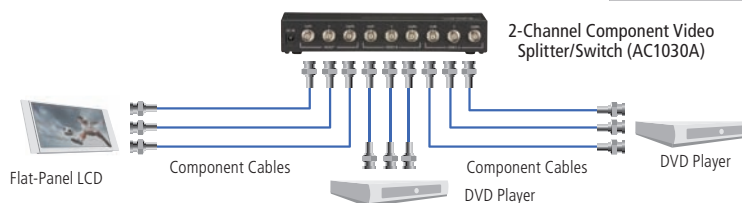


Item	Code
First, order a host module...	
CAT5 VGA Video Splitters	
2-Channel	AC500A-R2
4-Channel	AC501A-R2
◆ Each includes (1) Splitter and (1) 5-ft. video cable.	
...next, order one module for each remote monitor in your application.	
Remote CAT5 VGA Video Splitter Modules	
Standard	AC502A-R2

See Video Splitters section
for more solutions.

2-Channel Component Video Splitter/Switch

Send Component video to two screens or switch between two video sources



- Great for digital signage applications.
- Configure this dual-purpose box as either a splitter or switch.
- BNC connectors for both input and output.
- Compatible with Component video (YCbCr or YPbPr) and RGB (sync-on-green) signals.
- Supports all interlaced and noninterlaced RGB, TV, and HDTV resolutions, including 720p, 1080i, and 1920 x 1080.

- Autosensing 100–240-VAC power supply.
- Front-panel LEDs show operation mode.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

CONNECTORS	CABLE	SWITCHING
Component	Native	Push Button

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Item	Code
2-Channel Component Video Splitter/Switch	AC1030A
◆ Includes (1) video splitter/switch, (9) RCA-to-BNC adapters, and (1) power supply.	

1-to-2 Composite Video Splitter • 1-to-2 S-Video Splitter

Send one Composite or S-Video signal to two locations

- Send a signal from one source, such as a video camera, to two devices, such as a TV or monitor.
- Buffered output ports and 150-MHz bandwidth provide excellent signal strength.
- Boosts signals and images over long runs.
- NTSC, PAL, and SECAM compatible.
- AC176A-R2: (3) BNC female.
- AC177A-R2: (3) 4-pin mini DIN female.



AC177A-R2: rear view

- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

RoHS — Yes

Item	Code
1-to-2 Composite Video Splitter	AC176A-R2
1-to-2 S-Video Splitter	AC177A-R2

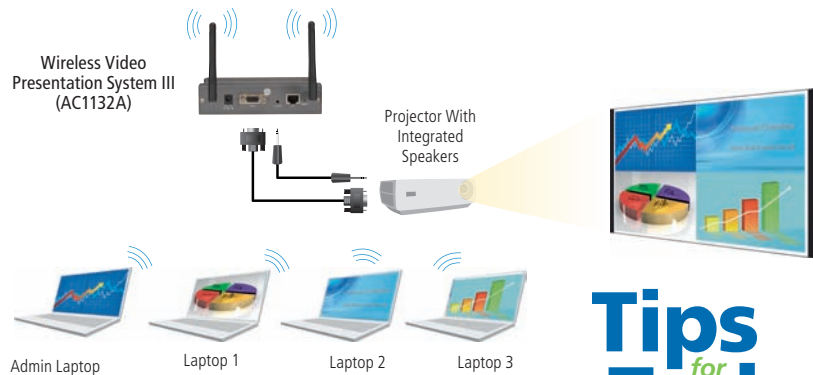
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CONNECTORS	CABLE
Composite or S-Video	Native

Wireless Video Presentation System III (Wireless VPS III)

The simple way to improve collaboration in large meeting rooms!

CONNECTORS	CABLE	PERIPHERALS
VGA RJ-45 Audio	Wireless Native	Speaker



Tips for Techs

a BLACK BOX® production
See the video on blackbox.co.uk

- Enables up to 254 users to wirelessly send their computer video and audio to a projector from where they sit—up to 300 feet (91.4 m) away.*
- Receives a Wi-Fi® laptop extended screen image for output to any VGA display device.
- Supports latest 802.11n Wi-Fi devices!
- Works with both PC and Mac® computers and is PDA and Windows Mobile® 5/6 compatible.
- Session login and gatekeeper functions keep presentation content secure.
- Uses IEEE standard 64-/128-bit WEP/ WPA/WPA2-PSK security.
- Has an RJ-45 port for wired LAN links. Also works as a wireless access point for WLAN and Internet connections.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

The Wireless Video Presentation System III (VPS III) enables collaboration by giving others easy access to what's being projected on-screen and frees you from being tethered to a projector during a presentation.

This 802.11b/g/n receiver transforms a "wired" projector into a high-end, 2.4-GHz wireless one. Plugged into any display device with a VGA port, it enables a roomful of laptop users to access that device from hundreds of feet away. It receives computer screen images wirelessly for output to the display.

Then from a Web-based control page, an administrator controls the order of access by the users and assigns quadrants to each presenter during a 4-to-1 split-screen session. It can also be managed via SNMPv2c.



To learn more, see blackbox.co.uk

TECH SPECS

IP Address Configuration — Automatic DHCP or manual (static)
Output Resolutions — SVGA (800 x 600), XGA (1024 x 768), WXGA (1280 x 768), WXGA+ (1280 x 800)
Standards — IEEE 802.11b/g/n (2.4 GHz), 802.3/3u (10BASE-T/100BASE-TX)
Video Formats — MPEG1, MPEG2, MPEG4, DivX® 3/4/5, Xvid, WMV 9, H.264 (.mov)
Video Streaming — Up to 30 fps
Wireless Channels — 11
Wireless Range (Maximum) — 300 ft. (91.4 m)*
Wireless Speed (Maximum) — 130 Mbps
CE Approval — Yes
RoHS — Yes
Connectors — (1) RJ-45 (network); (1) HD15 F (VGA); (1) 3.5-mm (stereo audio); (1) USB F (USB 2.0)
Size — 1.1"H x 4.6"W x 5.5"D (2.7 x 11.7 x 14 cm)
Weight — 1.1 lb. (0.5 kg)

* NOTE: Distance possible in optimum conditions.

Item	Code
Wireless Video Presentation System III	AC1132A
◆ Includes (1) receiver with antennas, (1) power supply, (1) USB token, (1) mounting kit, and (1) flash drive with user's manual.	

Loaded with features for simpler access *plus* more productive meetings!

- Includes Plug & Show token for fast setup for all meeting participants.
- Simple, Web-based conference control screen.
- Remote desktop function. Plug in USB keyboard/ mouse to control your PC wirelessly.
- Enlarges part of a video for full-screen playback.
- Supports 4-to-1 split-screen projection. Display four users' screens at the same time!
- Or show one screen on four displays (1-to-4)—works like as a sharable wireless VGA splitter.

Advanced Projector Controller with 2-Channel VGA Splitter

Automate projector and device functions for presentations



Top: rear view;
bottom: front view

- Automatically detects VGA, Composite, or S-Video inputs and issues control commands to the device via a bidirectional RS-232 port.
- Built-in dual VGA splitter boasts a 150-foot (45.7-m) drive capability.
- Connect your PC, notebook, VCR, DVD, camera, etc. to the video input of the unit.
- Wide bandwidth supports resolutions to 1600 x 1200 at any refresh rate.
- Fully user-programmable to control and manage your projector.

CONNECTORS	CABLE	CONTROL
VGA Composite S-Video	Native	OSD

- Prioritizes devices if more than one is connected to the unit.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

Item	Code
Advanced Projector Controller with 2-Channel VGA Splitter	AC1033A

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Micro Wireless VGA Presentation Tool

Enhance meeting collaboration. Plug this compact device into a display for easy presentation sharing



- Wirelessly project laptop video from where you sit — up to 300 feet (91.4 m) away.
- Easy to set up and use.
- Supports four active users in quad-screen mode.
- Compatible with 802.11n.
- Features plug-and-display, Web browser-based control.
- Supports TCP/IP protocols and DHCP or static IP address configuration.
- Outputs SVGA and XGA resolutions; supports 32-bit color.
- Functions as both a wireless receiver and an 802.11b/g/n access point/bridge.
- **STANDARD WARRANTY** — 1 Year
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Simplify presentation sharing during meetings. The Micro Wireless VGA Presentation Tool plugs into any display or projector with a VGA port, enabling laptop or other Wi-Fi users to log in and display video wirelessly. It supports multiple users and can display up to four at the same time in quad-screen mode.

And because it also works as a wireless access point for clients, you can configure it to communicate with existing wireless access points on your network to access the Internet or a LAN.

To install the Micro Wireless VGA Presentation Tool, you simply insert it into the VGA port on your display or projector, plug in its power adapter (if PoVGA isn't supported), power up the projector or display, and turn on the presentation tool.

TECH SPECS

Operating System Support — Windows XP®/Vista/7
Resolutions — 800 x 600, 1024 x 768, 1280 x 768, 1280 x 800
Standards — IEEE 802.11b/g/n (2.4 GHz), IEEE 802.3 (10BASE-T), IEEE 802.3u (100BASE-TX)
Wireless Encryption/Key — IEEE standard 64-/128-bit WEP/WPA/WPA2-PSK
CE Approval — Yes
RoHS — Yes
Connectors — VGA output: (1) HD15 M; Power: (1) barrel jack
Indicator — (1) Power LED
Power — Either PoVGA or external AC power supply: Input: 100–240 VAC, 50–60 Hz; Output: 5 VDC, 1.2 amps (max.)
Size — 0.9"H x 1.5"W x 3.75"D (2.3 x 3.8 x 9.5 cm)
Weight — 0.1 lb. (0.05 kg)

Item	Code
Micro Wireless VGA Presentation Tool	AVX-VGA-WI

A/V Switching Control System with Audio

Control conference room display devices remotely

- Add high-end audio/video control capabilities to a meeting room or classroom with this discreet wallplate transmitter and standalone receiver system.
- Provides audio/video switching and display control, UTP extension, and audio amplification in a single package.
- Switch between three sources for output to a projector or other display device and speakers.
- Control up to 750 feet (228.6 m) away over a CATx link. Also offers DB9 serial control.
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years



The system includes a 4-gang wallplate transmitter (above) and a receiver (right), which fit easily and discreetly in most rooms!



Attach an external stereo amp!

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TECH SPECS

Resolution (Maximum) — PC: 1600 x 1200 non-interlaced, 85 Hz;
 HDTV: 1080i; NTSC, PAL, or SECAM S-Video or Composite video
CE Approval — Yes
RoHS — Yes
Connectors — Transmitter: Source 1: (1) HD15 F (VGA) with (1) stereo audio jack;
 Source 2: (1) HD15 F (VGA) with (1) stereo audio jack;
 Source 3: (1) 4-pin mini DIN F (S-Video)/(1) RCA (Composite) with (2) audio (left/right) jacks;
 Interconnection (rear): (2) RJ-45 (Port A and Port B),

(1) 3.5-mm serial (3.5-mm/DB9 cable supplied);
 Receiver: Video output: (1) HD15 F (VGA), (1) 4-pin mini DIN (S-Video);
 Serial: (1) DB9 M (to control projector);
 Audio speakers: (2) screw terminals;
 Audio line out: (1) jack;
 Interconnection: (2) RJ-45 (Port A and Port B)
Power — 100–240 VAC, 50–60 Hz, autosensing
Size — Transmitter: 1.4"H x 8.2"W x 4.5"D (3.6 x 20.8 x 11.4 cm);
 Receiver: 1.4"H x 6.5"W x 3.6"D (3.6 x 16.5 x 9.1 cm)
Weight — Both units: 2.1 lb. (1 kg)

Item	Code
A/V Switching Control System with Audio	AC1075A

◆ Includes (1) wallplate transmitter, (1) standalone receiver with (1) power supply, (1) serial programming cable, and (1) Windows® GUI software CD.

DisplayPort Cables and Adapter Cables

The fast, compact digital interface

- Transmit both digital video and audio in one cable.
- Support video with up to 1080p resolution plus digital audio.
- Version 1.1 supports 10.8 Gbps.
- Compact latching connectors.
- Support color depths of 6, 8, 10, 12, and 16 bits and two-way connectivity.
- Adapters are interface powered and require no separate power supply.
- **◆◆ WARRANTY** — Lifetime



RoHS — Yes

Item	Code	Call Sales or Visit the Website for Pricing
DisplayPort Cable, Male/Male, 32 AWG		
3-ft. (0.9-m)	VCB-DP-0003-MM	
6-ft. (1.8-m)	VCB-DP-0006-MM	
10-ft. (3.0-m)	VCB-DP-0010-MM	
15-ft. (4.5-m)	VCB-DP-0015-MM	

Item	Code
DisplayPort Adapter Cables, 12" (20.3 cm)	
DisplayPort Male to HDMI Female	EVNDPHDMI-MF-R3
to DVI-D Female	EVNDPDI-MF-R3
to HD15 (VGA) Female	EVNDPVGA-MF-R3

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HDMI Cables and Adapters

Transmit your digital video and digital audio signals over one cable!

- Just one cable contains the wiring you need to transmit high-bandwidth compressed video, multichannel digital audio, and intelligent format and command data.
- Connect HDTV set-top boxes, digital TVs, DVDs, and other equipment with HDMI interfaces.
- Premium High-Speed HDMI Cables with Ethernet also transmit network data—great for networking HDMI Ethernet Channel enabled devices, such as Blu-ray players, without a separate Ethernet cable.
- Swivel adapters and cable have connectors that turn 90° for angled installations.
- HDMI-to-DVI cables and adapters enable you to connect mismatched interfaces.
- Double shielding prevents signal loss and screen ghosting for maximum video performance.
- **◆◆ WARRANTY** — Lifetime



HDMI® is a standard interface for connecting digital media. Black Box has a wide range of HDMI cables and adapters to fit your AV installation. Use them to connect DVD and Blu-ray players, set-top boxes, and other digital audio/visual equipment with the HDMI interface.

For transmitting network data over the same cable, order our Premium High-Speed HDMI Cables with Ethernet. They feature a dedicated data channel for connecting HDMI Ethernet Channel enabled devices. Also, because they're high speed, they're ideal for advanced 4K, 3D, and Deep Color video display applications.

RoHS — Yes

▶ For more details,
see blackbox.co.uk

Item	Code
Premium High-Speed HDMI Cable with Ethernet, PVC, Male/Male	
1-m (3.2-ft.)	VCB-HDMI-001M
2-m (6.5-ft.)	VCB-HDMI-002M
3-m (9.8-ft.)	VCB-HDMI-003M
5-m (16.4-ft.)	VCB-HDMI-005M
7-m (23.0-ft.)	VCB-HDMI-007M
10-m (32.8-ft.)	VCB-HDMI-010M
15-m (49.2-ft.)	VCB-HDMI-015M
20-m (65.6-ft.)	VCB-HDMI-020M
25-m (82.0-ft.)	VCB-HDMI-025M
30-m (98.4-ft.)	VCB-HDMI-030M
Standard HDMI to HDMI Cable, Swivel/Swivel, Male/Male	
1-m (3.2-ft.)	EVHDMI04-DS-001M
2-m (6.5-ft.)	EVHDMI04-DS-002M
3-m (9.8-ft.)	EVHDMI04-DS-003M

Item	Code
Standard HDMI to HDMI Cable, Swivel/Straight, Male/Male	
1-m (3.2-ft.)	EVHDMI04-SS-001M
2-m (6.5-ft.)	EVHDMI04-SS-002M
3-m (9.8-ft.)	EVHDMI04-SS-003M
Standard HDMI to HDMI Micro Cable, PVC, Male/Male	
0.9-m (3.0-ft.)	HDMI-MICRO-0003
1.8-m (6.0-ft.)	HDMI-MICRO-0006
Standard HDMI to DVI Cable, PVC, Male/Male	
1-m (3.2-ft.)	EVHDMI02T-001M
2-m (6.5-ft.)	EVHDMI02T-002M
3-m (9.8-ft.)	EVHDMI02T-003M
5-m (16.4-ft.)	EVHDMI02T-005M
Standard HDMI Adapters	
HDMI Male to DVI Female	FA790
HDMI Male to DVI Male	FA795-R2
Standard HDMI Swivel Adapter, 24-Pin	
HDMI Male to DVI Female	FA791

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DVI Cables and Adapters

Get high-speed digital communications and improved video

- Supports dual-link digital transmissions up to 9.9 Gbps and single-link digital transmissions up to 4.95 Gbps.
- Optimizes computer-to-projector connections, eliminating resolution or color changes and pixel-lock adjustments.
- DVI/DVI cables meet the requirements of digital video, digital telecommunications, and parallel computing.
- ♦♦ **WARRANTY** — Lifetime

RoHS — Yes



FA461



FA462

Item	Code
DVI Cables	
DVI-A Male, Single-Link, Straight Hood/VGA HD15 Male	
6-ft. (1.8-m)	EVNDVI01-0006
10-ft. (3.0-m)	EVNDVI01-0010
15-ft. (4.5-m)	EVNDVI01-0015
25-ft. (7.6-m)	EVNDVI01-0025
DVI-I Male Dual-Link, 90° VGA HD15 Male	
6-ft. (1.8-m)	EVNDVI04-0006
Custom Lengths	EVNDVI04
DVI-D Male/DVI-D Male, Dual-Link, Straight Hoods	
6-ft. (1.8-m)	EVNDVI02-0006
10-ft. (3.0-m)	EVNDVI02-0010
15-ft. (4.5-m)	EVNDVI02-0015
25-ft. (7.6-m)	EVNDVI02-0025
35-ft. (10.6-m)	EVNDVI02-0035
50-ft. (15.2-m)	EVNDVI02-0050

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Item	Code
DVI Cables (Continued)	
DVI-D Male/DVI-D Female Extension	
6-ft. (1.8-m)	EVNDVI03-0006
10-ft. (3.0-m)	EVNDVI03-0010
DVI-I Male/DVI-I Male, Dual-Link, Straight Hoods	
3.2-ft. (1.0-m)	DVI-I-DL-001M
4.9-ft. (1.5-m)	DVI-I-DL-001.5M
6.6-ft. (2.0-m)	DVI-I-DL-002M
9.8-ft. (3.0-m)	DVI-I-DL-003M
16.4-ft. (5.0-m)	DVI-I-DL-005M
32.8-ft. (10.0-m)	DVI-I-DL-010M
DVI Adapters, Single-Link	
DVI-I Male-VGA HD15 Female	FA461
DVI-I Female-VGA HD15 Male	FA462

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Easy-Pull VGA Cable

Run VGA cable through walls or inside tight conduits. This cable goes 150 feet or more

- Ideal for system integration.
- Connects PC or RGB video sources to display devices like projectors, flat screens, and more.
- Provides 1024 x 768 video resolution up to 150 feet and 800 x 600 video resolution up to 200 feet.
- Super flexible! You can pull it through 3/4" conduits, and it makes pull times faster.
- Plenum-rated jacket.
- Includes heat shrink tubing for permanent installation.
- ♦♦ **WARRANTY** — Lifetime



HD15 Male-VGA



HD15 Female-VGA



For specifications,
see blackbox.co.uk

Item	Code
Easy-Pull VGA Cable	
15-ft. (4.5-m)	EVNPS80-0015
25-ft. (7.6-m)	EVNPS80-0025
35-ft. (10.6-m)	EVNPS80-0035
50-ft. (15.2-m)	EVNPS80-0050
100-ft. (30.4-m)	EVNPS80-0100
150-ft. (45.7-m)	EVNPS80-0150
Custom Lengths	EVNPS80

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Item	Code
You may need a wallplate...	
DB9 Wallplates (<i>For details, see blackbox.co.uk</i>)	
Single-Width	
(1) Punch	WP070
(2) Punch	WP071
Double-Width	
(1) Punch	WP072
(2) Punch	WP073

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VGA Video Cable with Ferrite Core

High-quality cable for superior video transmissions

- Ferrite core offers extra protection against external interference.
- Features tinned copper braid and outer braid for signal shielding.
- HD15 video connectors have Pins 9 and 15 enabled for compliance with the Display Data Channel (DDC) standard.
- Male/male cables also available in black.
- Custom lengths also available. Call for details.
- **WARRANTY** — Lifetime



CE Approval — Yes
RoHS — Yes

Item	Code
VGA Video Cable with Ferrite Core, HD15, PVC, Beige	

3-ft. (0.9-m)	
M/M	EVNPS06-0003-MM
M/F	EVNPS06-0003-MF
F/F	EVNPS06-0003-FF

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5-ft. (1.5-m)	
M/M	EVNPS06-0005-MM
M/F	EVNPS06-0005-MF
F/F	EVNPS06-0005-FF

10-ft. (3.0-m)	
M/M	EVNPS06-0010-MM
M/F	EVNPS06-0010-MF

Item	Code
VGA Video Cable with Ferrite Core, HD15, PVC, Beige	

20-ft. (6.0-m)	
M/M	EVNPS06-0020-MM
M/F	EVNPS06-0020-MF
F/F	EVNPS06-0020-FF

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Item	Code
VGA Video Cable with Ferrite Core, HD15, PVC, Black, M/M	

3-ft. (0.9-m)	EVNPS06B-0003-MM
5-ft. (1.5-m)	EVNPS06B-0005-MM
10-ft. (3.0-m)	EVNPS06B-0010-MM
20-ft. (6.0-m)	EVNPS06B-0020-MM
25-ft. (7.6-m)	EVNPS06B-0025-MM
50-ft. (15.2-m)	EVNPS06B-0050-MM
75-ft. (22.8-m)	EVNPS06B-0075-MM

Component Video Cable

Hard-to-find cable for high-resolution video and audio—at a great price!



CE Approval — Yes
RoHS — Yes

- Use for digital imaging, HDTVs, set-top boxes, soundstages, recording equipment, DVD players, and more.
- Feature green, blue, and red RCA connectors on each end.
- Signals are carried over mini-coax conductors for superior performance.
- Coax conductors are protected by foil and copper-braided shielding to reduce distortion.
- Custom lengths also available.
- **WARRANTY** — Lifetime

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Item	Code
Component Video Cable, (3) RCA M Connectors on Each End	

2-ft. (0.6-m)	EJ517-0002
25-ft. (7.6-m)	EJ517-0025
50-ft. (15.2-m)	EJ517-0050

Get the cable you need fast!

Finding the right cable for your application is easy
Visit our Web site to configure your cable

- CATx cables
- Fibre optic cables
- Custom cables and adapters

▶ For all our configurators, visit: blackbox.co.uk



Digital Signage Power Filter

Affordably protects displays, terminals, and other equipment at the point of use

- Surge protection, noise filtering, and power management in one unit.
- Uses transient voltage surge suppression (TVSS) to reliably protect three devices against disturbances.
- Safeguards loads up to 7 amps at the point of use.
- Also offers telephony/ADSL line (RJ-11) protection and 10-/100-/1000-Mbps network data line (RJ-45) protection.
- Use it standalone or wallmounted (bracket and screws included).
- **STANDARD WARRANTY** — 2 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

Great for digital signage networks, PoS terminals, and other peripherals, this compact power filter protects three devices by preventing voltage transients from reaching sensitive electronic circuitry. Plus it provides telephony/ADSL line and network data line protection.

More effective than comparatively priced products, the Digital Signage Power Filter delivers UVR performance of less than/equal to 330 volts, the best protection level defined by UL® 1449.

Its filtering reduces final let-through voltage to 20 volts or less. Plus, the filter features overcurrent protection with a push-to-reset circuit breaker (no fuses to replace).

RoHS — Yes



The power filter features (3) NEMA 5-15R outlets on a 6-inch (15.2-cm) cord and a 6-foot (1.8-m) power cord.

Item	Code
Digital Signage Power Filter	DSPF3-S7-120V

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In-Line Surge Protectors

Handy devices for protecting CATV, CCTV, and network devices from damaging power surges



CATV Surge Protector

- Ideal for use with your CATV equipment, as well as antennas.
- Protects against lightning surges and electrical transients.
- Simple in-line installation at the port.
- Features two F-type connectors.
- Waterproof.
- Gas discharge tube technology.
- **STANDARD WARRANTY** — 10 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

Item	Code
CATV Surge Protector	SP090A-R2



CCTV (BNC Coax) Surge Protector

- Connects directly to coax transmission lines.
- Silicon Avalanche Diodes provide the fastest response time available.
- Features two BNC female connectors.
- Includes a BNC male-to-male gender changer.
- 12 V clamping voltage; <0.2 ns response time.
- Ideal for use with mounted CCTV cameras.
- **◆◆ WARRANTY** — Lifetime

RoHS — Yes

Item	Code
CCTV (BNC Coax) Surge Protector	SP450A-R2



CAT6 In-Line Surge Protector

- Protects CATx interfaces against power surges, electrostatic discharges, and ground loops.
- Supports speeds up to 1000 Mbps, making it ideal for Gigabit Ethernet applications.
- Use to protect PCs, switches, and more.
- Advanced avalanche diode technology.
- Low shunt capacitance reduces signal loss.
- **STANDARD WARRANTY** — 10 Years
- **EXTENDED WARRANTY** — Add 1 or 3 Years

CE Approval — Yes
RoHS — Yes

Item	Code
CAT6 In-Line Surge Protector	SP529A

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Visit our Web site to see more:

- Surge protection and opto-isolation solutions.
- Power distribution units for horizontal or vertical rack use.
- UPS solutions for continuous workstation uptime.
- Fallback and redundant power switches.



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A-C

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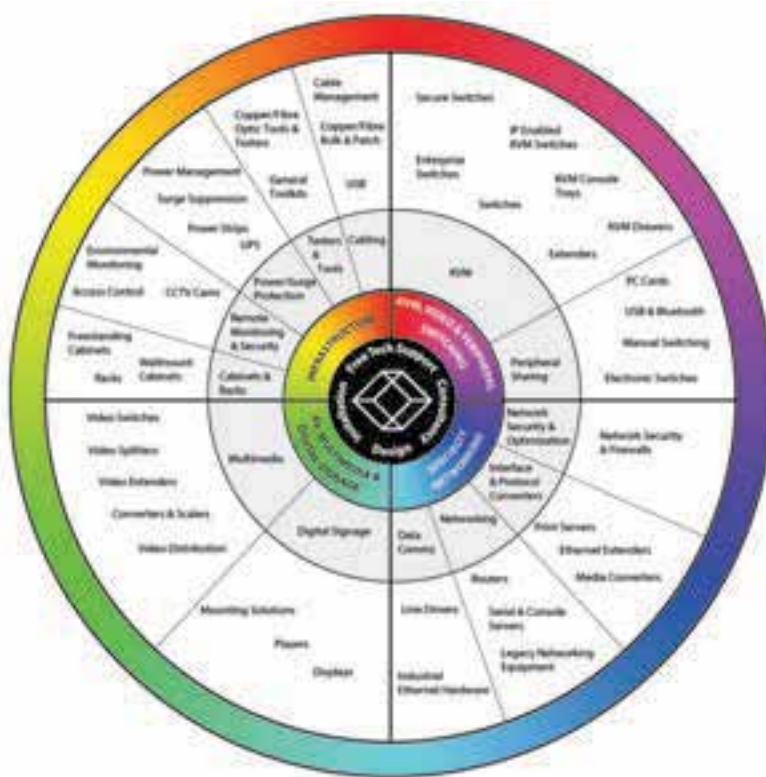
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KVM switching saves you money, time and space and is appropriate for us in almost any computing or IT configuration. KVM hardware is applicable to IT/Computing environment, be it as extension, switching or remote access.

- KVM - Switches, extenders, draws and trays
- Peripheral Sharing - PC Cards, USB, Manual Switching, Electronic

KVM, VIDEO & PERIPHERAL SWITCHING

Networking:

Get the most out of the network that's vital to the function of your organisation. For everything you need to get your network connected, extended or media converted ensuring the vital communication of the backbone in your organisation.

- Network Security & Firewalls
- Interface & Protocol Conversion
- Converters

AV, MULTIMEDIA & DIGITAL SIGNAGE

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Talk to Black Box Network Services for complete start-to-finish services for your data in Infrastructure, be it copper cable, fibre cable, custom assemblies or even installation.

- Cabinets & Racks
- Remote Monitoring & Security
- Power/Surge Protection
- Testers & Tools
- Cabling

SPECIALTY NETWORK

AV/Digital Signage/Multimedia:

Deliver the right message at the right time to the right audience for compelling results

- Digital Signage - Mounting solutions, players, displays
- Multimedia - Switches, splitters, extenders, scalars, distribution

The central circular diagram is divided into four quadrants, each representing a service area. The top quadrant is 'KVM, VIDEO & PERIPHERAL SWITCHING' (pink). The bottom quadrant is 'AV, MULTIMEDIA & DIGITAL SIGNAGE' (green). The left quadrant is 'INFRASTRUCTURE' (blue). The right quadrant is 'SPECIALTY NETWORK' (orange). The center of the circle contains the text 'Black Box Network Services' and 'Design'. Various specific services are listed around the perimeter of the circle, corresponding to each quadrant.

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